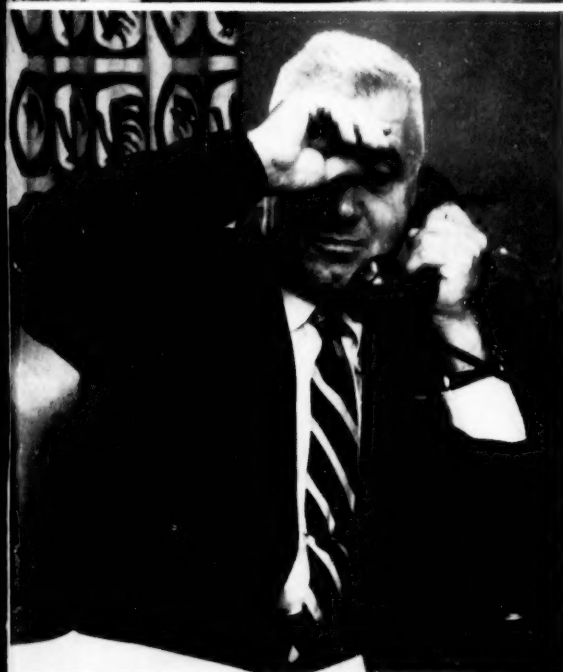


Chemical Week

August 21, 1954

Price 35 cents



► GAF's Linden plant is storm center in hot controversy on Dirksen bill to unload alien property . p. 24

Your traffic manager can help hold down the costs of sales; here's how p. 62

Makers pull out all the stops in drive on \$21-million-plus market for summer specialties . . p. 62

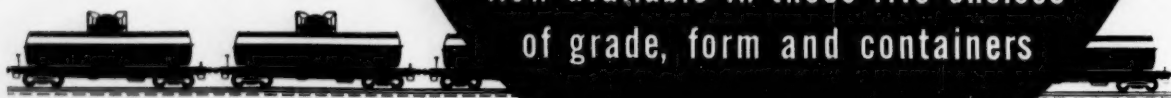
► Inco's LaQue tells how to out-fumble corrosion when reaching for \$6-billion annual bill . p. 57

Acrylonitrile, building block for synthetics, reverses field to come to aid of cotton p. 98

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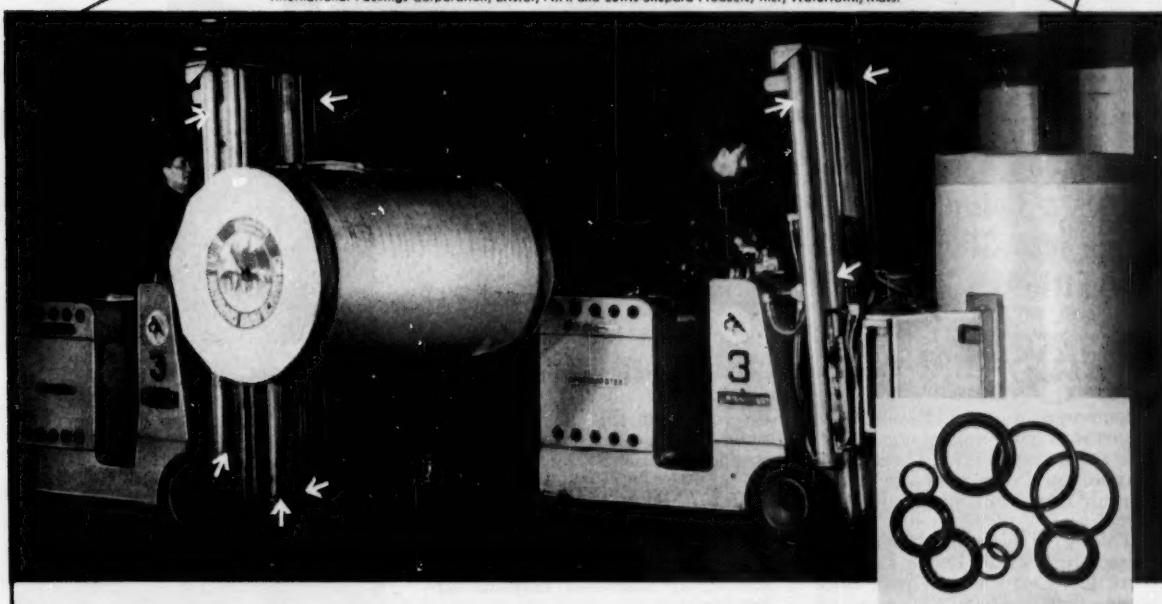
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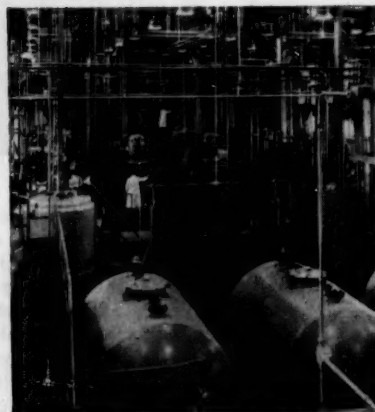
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Volume 75

August 21, 1954

Number 8

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Executive Editorial and Advertising Offices: McGraw-Hill Building, 330 W. 42nd St., New York 36, N. Y. Donald G. McGraw, President; Willard Chevalier, Executive Vice-President; Joseph A. Gerardi, Vice-President and Treasurer; John J. Cooke, Secretary; Paul Montgomery, Executive Vice-President, Publications Division; Ralph B. Smith, Vice-President and Editorial Director; Nelson Bond, Vice-President and Director of Advertising; J. E. Blackburn, Jr., Vice-President and Director of Circulation.

Subscriptions to Chemical Week are solicited in the chemical and process industries from management men in administration, research, production and distribution. Position and company connection must be indicated on subscription order. Address all subscription communications to Chemical Week Subscription Service, 1309 Noble St., Philadelphia 23, Pa., or 330 W. 42nd St., New York 36, N. Y. Allow one month for change of address.

Single copies 35¢. Subscription rates—United States and Possessions \$5.00 a year; \$8.00 for two years; \$10.00 for three years. Canada \$6.00 for a year; \$10.00 for two years; \$12.00 for three years. Other Western Hemisphere and the Philippines \$15.00 a year; \$25.00 for two years; \$30.00 for three years. All other countries \$25.00 a year; \$40.00 for two years; \$50.00 for three years. Entered as second class matter December 20, 1951 at the Post Office at Philadelphia 23, Pa., under the act of March 3, 1879. Printed in U.S.A. Copyright 1954 by McGraw-Hill Publishing Co., Inc.—All rights reserved.

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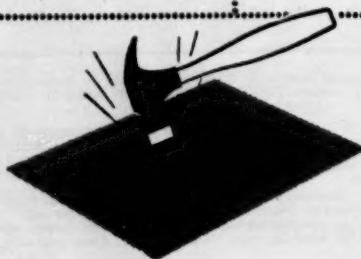
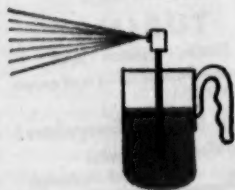
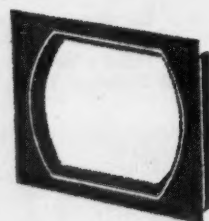
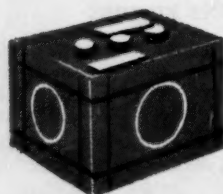
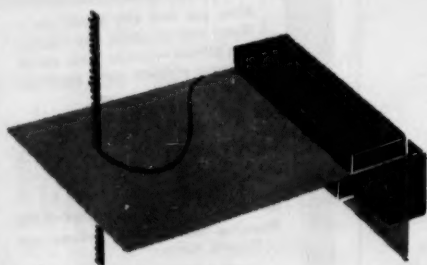
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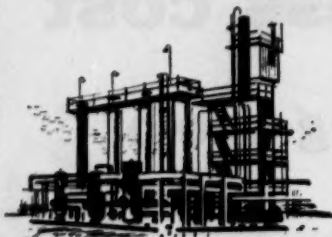
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OPINION

Thees Engleesh

TO THE EDITOR: I sympathize with you . . . re the tussle you are having concerning datum and data . . . and any an all such worrisome—and worrying words . . . about which people fret and fume . . .

As solace, and so that more readers and lovers of the English language may be endowed with mellow understanding, I'm enclosing a poem that appeared in the *Boston Transcript* a few years ago . . .

RALPH L. HALEY
Cambridge, Mass.

The poem:

"If one is a tooth and a whole set are teeth,
Then why shouldn't booth in the plural be beeth?
If the plural of man is always called men,
Why shouldn't the plural of pan be called pen?
You may find a lone mouse or a whole nest of mice,
But more than one house is most surely not hice.
A cow in the plural is properly kine,
But a bow if repeated is never called bine.
Then one may be that and two would be those,
Yet hat in the plural would never be hose.
We speak of a brother and also of brethren,
But though we say mother we never say methren.
The masculine pronouns are he, his, and him,
But imagine a feminine she, shis and shim!
So the English, I fancy you all will agree,
Is the funniest language you ever did see."

Partnership

TO THE EDITOR: . . . You express the opinion that the Tin Agreement might be called a cartel if in using the word is meant "a written agreement between nations." But it does not mean that. One definition (Webster) is "a written agreement between opposing nations. The signatories of the Tin Agreement are 20 cooperating nations.

The definition of cartel . . . most generally accepted is "an association of private business organizations bound by contract to cooperate in regulating production and marketing of products thus tending to restrict world markets and fix prices."

That is not applicable to the Inter-

national Tin Agreement, which is intergovernmental, not private; which has been signed by . . . governments of 14 tin-consuming . . . and 6 tin-producing countries; which accords an equal number of votes to consuming and producing countries; which cannot operate without the approval of both a majority of consuming . . . and a majority of producing countries.

Thus, it is actually a partnership of consumers and producers . . . The objectives of the Agreement are "to prevent excessive fluctuations in the price of tin, to achieve reasonable stability of price and to assure adequate supplies of tin at reasonable prices at all times."

To describe such an agreement . . . as a cartel is not only inaccurate and misleading; it is studiously insulting to the 20 signatories . . .

LYNN W. MEEKINS
Director
The Malayan Tin Bureau
Washington, D.C.

Helpful Hints Dept.

TO THE EDITOR: . . . I have read your news article "Permanents Discount Permanence" . . . You have covered the ground quite thoroughly on how the manufacturers of permanent antifreeze hope to re-educate the public to discard their permanent-type antifreeze every year, in order to create larger sales.

. . . From the standpoint of the average citizen, what would be much more interesting and helpful would be a set of facts definitely establishing whether or not it is necessary or desirable from any standpoint to discard antifreeze every season . . . I would appreciate any facts . . .

DAY E. CUTLER
Sales Manager
J. S. McCormick Co.
Pittsburgh

To answer Reader Cutler, and the hundreds of others who have asked the same question, *National Carbon (Pres-tone)* has this to say:

Modern engines are so designed that their cooling capacity is approaching the critical point. (Higher horsepower,

CW welcomes expressions of opinion from readers. The only requirements: that they be pertinent, as brief as possible.

Address all correspondence to: W. A. Jordan, Chemical Week, 330 W. 42nd St., New York 36, N. Y.

for instance, means that radiators must dissipate more heat.) Rusting impairs radiator efficiency.

Most glycol antifreezes contain rust inhibitors but the life of the inhibitor cannot be guaranteed ad infinitum. A loose cylinder head, for example, can enable exhaust gases to contaminate the coolant via the water transfer holes between the block and the head—and destroy the inhibitor. Air, drawn in through the water pump—which usually circulates water at a 50-60 gal. per minute rate—can also exhaust the inhibitor. Moreover, glycol—devoid of inhibitor and in the presence of ferrous iron—can be oxidized to aldehydes, acids, other corrosive products.

Therefore, it is not practical for the antifreeze to be guaranteed beyond one season—in the light of all the varying conditions that might obtain in particular engines. Nor has any “universal rust inhibitor” been developed that can be added to inhibitor-spent glycol to restore it to its original worth.

Moreover, it's undesirable to keep a glycol coolant in use during the summer—because its heat transfer index is lower than water. (Most thermostats are set at 180 F; for ideal operation, and to minimize preignition, the temperature differential between coolant and atmosphere should be 100 degrees. Thus, in summer, there is burden enough on the cooling system without using a coolant that is subpar [water] in efficiency.)

Thus, National Carbon feels, it is prudent to change antifreeze from season to season; It's “insurance.” But, if anyone chooses to do otherwise, it's his calculated risk—and for him to decide.

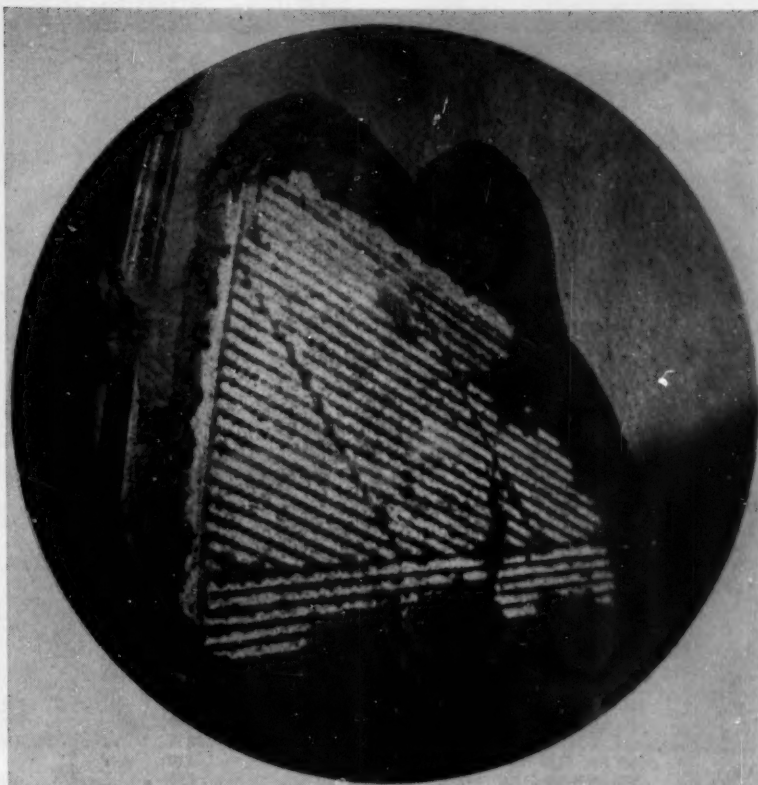
Publications expressing a similar view have been issued by the American Automobile Assn., American Society for Testing Materials, National Bureau of Standards, Society of Automotive Engineers.—ED.

More Facts, Less Bias

TO THE EDITOR: I have read the letter from O. M. Baxter (June 12), feel that the writer is a little bit misinformed re the statements made on the fluoridation of water.

To begin with, the writer should know that the program for fluoridating water was initiated by dental organizations and supported to the hilt by the U.S. Public Health Service. There has also been some Congressional investigation as to the merit of the fluoridating program . . . and evidently it has been regarded as a constructive step in the prevention of tooth decay . . .

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BISMUTH STANNATE	$\text{Bi}_2(\text{SnO}_3)_3 \cdot 5\text{H}_2\text{O}$	140
CADMIUM STANNATE	$\text{CdSnO}_3 \cdot 3\text{H}_2\text{O}$	320
CALCIUM STANNATE	$\text{CaSnO}_3 \cdot 3\text{H}_2\text{O}$	350
COBALT STANNATE	$\text{CoSnO}_3 \cdot 2\text{H}_2\text{O}$	320
COPPER STANNATE	$\text{CuSnO}_3 \cdot 3\text{H}_2\text{O}$	280
FERRIC STANNATE	$\text{Fe}_2(\text{SnO}_3)_3 \cdot 3\text{H}_2\text{O}$	140
FERROUS STANNATE	$\text{FeSnO}_3 \cdot 3\text{H}_2\text{O}$	320
LEAD STANNATE	$\text{PbSnO}_3 \cdot 2\text{H}_2\text{O}$	170
MAGNESIUM STANNATE	$\text{MgSnO}_3 \cdot 3\text{H}_2\text{O}$	340
MANGANOUS STANNATE	$\text{MnSnO}_3 \cdot 3\text{H}_2\text{O}$	310
NICKEL STANNATE	$\text{NiSnO}_3 \cdot 2\text{H}_2\text{O}$	120
STRONTIUM STANNATE	$\text{SrSnO}_3 \cdot 3\text{H}_2\text{O}$	350
ZINC STANNATE	$\text{ZnSnO}_3 \cdot 4\text{H}_2\text{O}$	280

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Calcium stannate is used in the production of chrome-tin maroon and pink ceramic stains.

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Lead and bismuth stannates are employed in pyrotechnical applications. The alkaline-earth stannates are suggested for phosphor bases.

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OPINION

fluorine products for over 40 years . . . neither we nor any other producers has ever made any determined effort to sell this product to various municipalities in the U.S. and Canada . . . I know of no firm that spent a single penny to intimidate any public or city official . . .

All drinking water must be chemically treated so that it will be palatable, algae-free, and germ-free. Most municipalities use chlorine, which, of course, is poisonous. Many use aluminum sulphate, others use copper sulphate. All these are poisonous, yet used in proper doses, are very constructive. The same applies to fluorine . . .

I think that if the letter writer would have taken into consideration some of these facts, the opinion expressed would have been not quite so biased . . .

ALFRED B. GOLDBACH
New York

So Far, So Good

TO THE EDITOR: . . . I noticed the big play the Taft Laboratory and the Public Health Service has been getting for its \$25,000 a year activity, now to be increased to \$130,000 (*July 24, p. 13*). The way your story reads, the impression is given that a tremendous amount of work is under way with respect to air pollution nationally, but when you consider the amount of money being talked about, it is obviously a pitifully small appropriation . . .

Why the federal government has not seen fit to get going on a public health program more consistent with the magnitude of the national air pollution problem is beyond me . . .

I wouldn't want to discourage Congress or the Public Health Service, and I suppose we should at least say "so far, so good," but I would be sorry if anyone thought their level of activity, so far, was more than a drop in the bucket . . .

NAME WITHHELD

DATES AHEAD

American Pharmaceutical Assn., annual meeting, Statler hotel, Boston, Aug. 22-27.

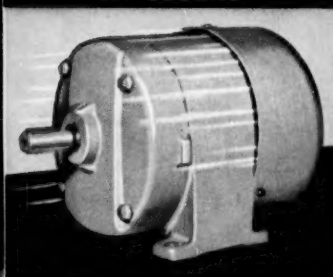
World Congress on Surface Active Agents, Sorbonne, Paris, France, Aug. 30-Sept. 3.

National Agricultural Chemicals Assn., annual meeting, Essex and Sussex hotel, Spring Lake, N.J., Sept. 8-10.

International Congress of Industrial Chemistry, Brussels, Belgium, Sept. 11-19.

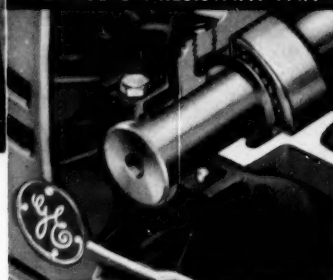
TRI 55 CLAD THE LEADER IN MODERN MOTOR DESIGN

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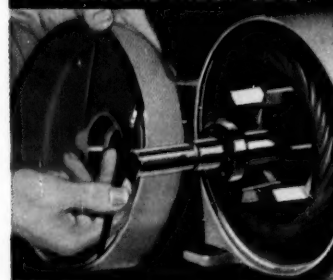
A BLANKET OF AIR spreads over entire surface, cooling and cleaning the new Tri/Clad '55'.

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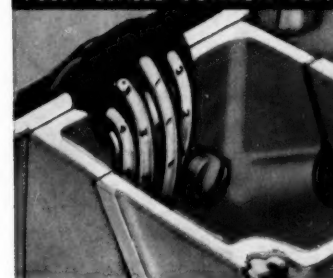
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General Electric's all-new Tri/Clad '55' enclosed motor meets the tough requirements of the chemical industry. Truly a chemical motor, the Tri/Clad '55' takes advantage of the industry's latest materials including silicone, polyester film, Textolite® and neoprene.

Because it's better protected, this standard motor gives you longer motor life in tough jobs. Frame and end shields are rust-resistant cast iron. Carefully machined rabbet fits are tightly sealed. Rubber gasket protects lead entry to stator.

New insulation materials also add life to this motor. A silicone Dri-film® coating on the stator sheds water—reduces insulation failure due to moisture. New polyester-film for slot and phase insulation is eight times stronger.

General Electric Tri/Clad '55' motors are available now in many ratings. The entire line, 1 to 30 hp a-c motors, available soon. For full details contact your nearby G-E Apparatus Sales Office or G-E Motor Supplier today. For bulletins on the complete line, write General Electric Company, Section 648-8, Schenectady 5, New York.

*Reg. trade-mark of General Electric Co.

Progress is our most important product

GENERAL  ELECTRIC

Q. *Could chemical research increase the heat resistance and other properties of plastics to allow greater use for packaging, insulating and other purposes?*

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THAT STEAM CAN'T COOK!**

It was wonderfully versatile . . . this plastic called polyethylene.

As spray bottles it could be squeezed. As food wrapping it could live in zero cold without becoming brittle. It could resist strong chemicals and fabricate easily.

Then General Electric discovered how to bombard it with electrons, cross-linking the molecules. Now the "irradiated" plastic would not distort . . . even despite temperatures of 250-300° F.

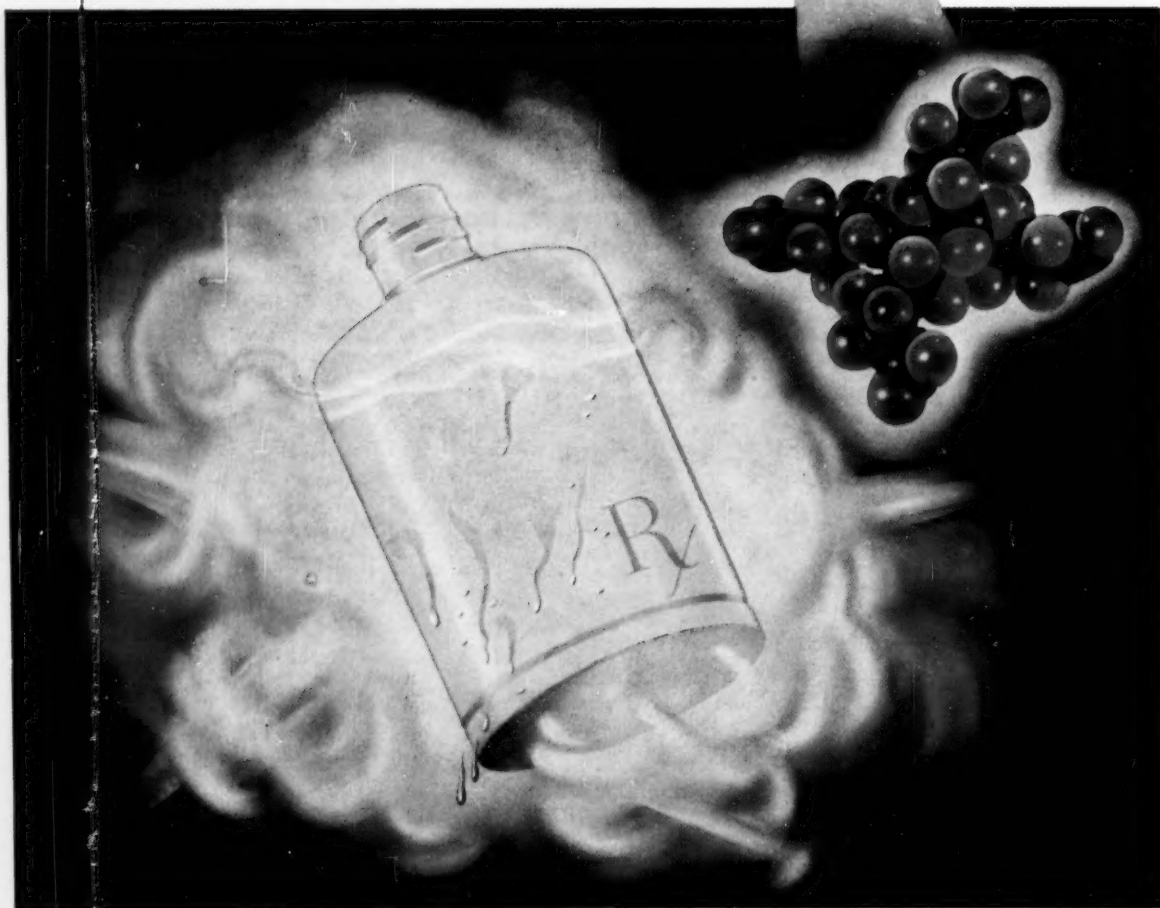
Still in the development stage, it shows great promise for sterilizable containers, for tape to insulate electrical equipment, for packaging hot food, for limitless uses awaiting only America's industrial ingenuity.

This is progress for all, through General Electric chemical research.

Another example of



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Progress is our most important product

GENERAL  ELECTRIC

NEWSLETTER

President Eisenhower, at his press conference last Thursday, made the economic optimists look very good indeed. They had predicted an upturn in general business for the last half of the year.

The President said, in effect, that the downturn had halted, noted that the Federal Reserve index—which hadn't been moving significantly—has started to climb a bit, and that business in general is picking up.

How did the chemical process industries fare during the slight dip? The CW index of chemical output (see Market Letter, p. 87) dropped slightly in January (from 124 to 119) but shot back up almost immediately. Although it's currently running at about 123,—three points lower than a year ago—it has held the line surprisingly well.

The CW price index, too, has been holding steady. And though first-half sales were off considerably, lower taxes just about evened up the score (CW, Aug. 7, p. 13).

•
Another clue to the economic outlook for the industry is the current level of company acquisitions:

- Eagle-Picher bought 98.8% of the common stock of Detroit's Fabricon Products, Inc.
- Allied Chemical acquired all the outstanding stock of Mutual Chemical under terms of the agreement reached last June (CW, June 12, p. 12).
- A. E. Staley Manufacturing Co. bought out Glidden's livestock and poultry feed business.

•
Possibly an even better index: expansion plans for commodities. Take a look at ammonia, for instance:

Allied, just after starting up its ammonia-urea plant in Omaha, decided to double its capacity to 120,000 tons of nitrogen products yearly (CW, Aug. 7, p. 10). Then last week, Salt Lake Chemical Co., which had been announced—but somewhat doubtful—starter in the ammonia race, said it was beginning construction immediately on an \$8-million, 120-ton/-day plant that would also produce 30 tons/day of dry ice.

On top of that, Standard Oil (Ohio) decided to put up a \$17-million nitrogen fertilizer plant that would make 300 tons/day of ammonia. It will use the ammonia to make urea (125 tons/day), nitric acid (60 tons/-day) nitrogen solutions (200 tons/day). Several sites in the Toledo-Lima area are under consideration. Construction—scheduled to start next month—is expected to be completed in the fourth quarter of next year. Kellogg is the most likely candidate for contractor of the ammonia portion.

•
Congress is grinding out bills at a quickened tempo during the closing days of its current session:

Both houses have passed a bill redefining present standards controlling interstate transport of flammable fabrics.

Also ready for Presidential action is a bill continuing duty-free importation of crude silicon carbide.

•
If the next Congress is Republican-controlled, you can expect

NEWSLETTER

another committee investigation of chemicals in foods and cosmetics.

Rep. A. L. Miller (R., Neb.) is readying a resolution authorizing it, has considerable support from the House leadership since the earlier Delaney committee failed to arrive at legislative proposals that could win industry support.

•
While industry was figuratively patting Dept. of Health, Education & Welfare Secretary Hobby's back for her appointment of Bradshaw Mintener as assistant secretary (see p. 16), it was also figuratively slapping her wrist for actions by her subordinates.

She received a letter last week from the Manufacturing Chemists' Assn. protesting statements by officials of the department and of the U. S. Public Health Service, which is under the H-E-W wing. The officials said that pollution will increase in proportion to manufacturing activity, that abatement information is scanty, that little research is being done.

President Foster denied these allegations in behalf of the chemical industry, pointed out that MCA itself sponsors research and publishes data in this field, and that the industry spends probably \$40 million/year on pollution control.

•
As if to back up Foster's contentions, abatement activity made news last week from New York to California:

- In Niagara Falls, N. Y., close cooperation between the city's air pollution control department and Pathfinder Chemical Corp. resulted in progress on a hydrogen sulfide emission problem.

- In Los Angeles, research contracts totaling \$150,000, submitted by the industry-supported Southern California Air Pollution Foundation, have been approved by the county board of supervisors. The Foundation expects to expend a total of \$750,000 during this calendar year.

•
At Chicago last week, delegates to the 11th annual convention of the International Chemical Workers Union (AFL) didn't get much other business transacted, but in the final tumultuous session they deposed as president H. A. Bradley, who has held the top office ever since the union was formed in 1944.

Chosen by 578 to 536 vote to succeed Bradley: Edward R. Moffett, senior vice-president and head of ICWU's Texas-Louisiana district. Moffett, who served temporarily as president during Bradley's hospitalization last winter, is pledged to step up the union's organizing efforts, particularly in the atomic energy field.

•
Want to lease phosphate land? Mineral Leasing Division, Bureau of Land Management, U. S. Dept. of Interior, Washington, has application forms for bids on 560 acres in Montana, 1,280 acres in Utah. Bids on the former close Aug. 25; on the latter, Sept. 8.

•
Despite President Eisenhower's letter to Chancellor Adenauer dimming German hopes that the U. S. would return wartime vested assets to their former owners (see p. 24), backers of the Dirksen bill aren't giving up. In fact, they're working even harder this week in a desperate, last-minute attempt to get the bill through Congress before the anticipated adjournment this weekend, figuring that their chances will be less by the time the new Congress meets in January. But Europeans were plainly discouraged. In Zurich, Interhandel common stock prices dwindled by 13% in four days, and at Frankfurt, stock of Schering A. G. was down by 10%.

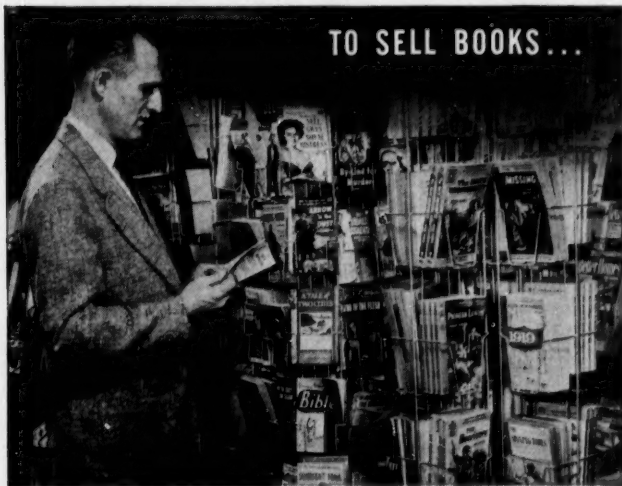
... The Editors

TO HANG WALLPAPER...



PRE-PASTED WALLPAPER, such as that manufactured by The Birge Company, uses Hercules® CMC to provide a non-staining type paste with adequate slip, permitting ample time for aligning patterns. And to retain its strength when wet, pre-pasted wallpaper relies on Kymene® resin.

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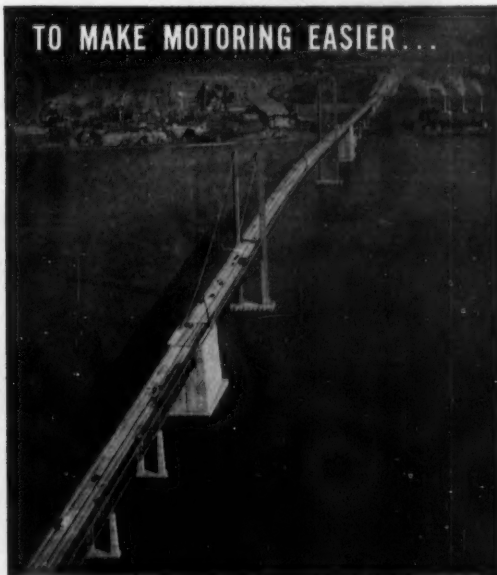
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Most businesses are helped today by Hercules' business... the production of synthetic resins, cellulose products, chemical cotton, terpene chemicals, rosin and rosin derivatives, chlorinated products, and many other chemical processing materials—as well as explosives. Through close cooperative research with its customers, Hercules has helped improve the processing or performance of many industrial and consumer products. We welcome the opportunity to work with you.

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BETTER DRIVING is in store for vacationists on highways and bridges protected during winter against ice or snow with Vinsol®, a Hercules-pioneered air-entraining agent in the cement. Also, Parlon®-based paints find wide use for road and crosswalk markings, and other traffic safety devices.

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The smartest dress in the little woman's wardrobe would be about as fashionable as an old burlap sack if it were not for companies like Jacques Wolf & Company, Clifton, New Jersey, leading producer of textile chemicals. These chemicals are used in the treating of fabrics of all types to give them strength, dye-ability, color-fastness, wrinkle resistance and many other desirable qualities.

It wasn't too long ago that Jacques Wolf had to put up with the high handling costs and damage losses that go with shipping products in wooden barrels because of their inability to find a steel drum lining that could successfully hold the wide variety of chemicals they were producing. Then Inland Steel Container developed a special lining that proved its ability to maintain the uniform high quality of Jacques Wolf chemicals in shipment and storage.

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Chemical Division, Dept. B

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BUSINESS & INDUSTRY. . . .

Bid for Chemical Aid

Those atomic experts who feel that kinks in chemical processing of used fuel from nuclear reactors are one of the biggest stumbling blocks to getting economic electric power from atomic energy and have wanted chemical industry help on this specific problem now have cause to be happy.

The Atomic Energy Commission last week accepted a proposal by Vitro Corp. of America—whose predecessor, Kellogg Corp., designed the original gaseous diffusion plant at Oak Ridge—for a year-long independent study of chemical and metallurgical processing techniques in nuclear power systems. This study, which will be financed entirely by Vitro, is the first of its kind to be approved by AEC under its new industrial participation program.

Thirteen other studies, all privately financed, were previously approved, but these—including one by Monsanto Chemical and two others in which Dow Chemical and Diamond Alkali were primary participants—were all directed toward basic reactor problems.

Key to Solution: Indication of how much importance is attached to the chemistry in atomic power production is this comment by R. P. Peterson, chief of AEC's industrial reactor branch: "The greatest opportunity for contribution to a nuclear power industry lies in improving the reprocessing of used fuel elements; that is, in removing fission fragments after a small percentage of fuel has been burned and getting it into condition to be put back into the reactor and used again. No one is going to be satisfied with the very small amount of fuel utilized per charge. Furthermore, chemical process methods now in use are too costly; they involve aqueous solution chemistry. New ideas are needed.

The new study will be mostly on-paper research. Vitro's Engineering Div. in New York will survey previous studies on industrial atomic power and AEC's own programs on processing requirements, then come up with its predictions of probable lines of development and most promising techniques. The researchers will check on fuel preparation, removal of fission product poisons, recovery of unspent fuel, and disposal of wastes.



INTERNATIONAL NEWS PHOTO
CIO'S REUTHER: For oil-chemical union merger, just gentle pressure.

Old Foes, New Friends

Their old feud forgotten, the two CIO unions that have overlapping jurisdiction in the petrochemical field this week are moving closer toward the merger that's been predicted ever since Walter Reuther became CIO president nearly two years ago.

Partly because of the wave of mergers among companies the past few years and the feeling that labor unions ought to "keep pace," the United Gas, Coke & Chemical Workers and the Oil Workers International Union are pushing on toward possible consummation of the merger that would confront the oil and chemical industries with a new, vigorous union, 200,000 members strong.

Merger talks have been in progress off and on for the past three months, but—according to CIO official Richard Leonard, appointed by Reuther as impartial umpire to catalyze the unification—the current series of negotiations has gotten much farther, much faster than any previous dickering.

Just One Dissenter: Twelve delegates from Gas-Coke and 12 from OWIU have been closeted in Washington since last week, with Leonard presiding. Both union presidents—Elwood Swisher of Gas-Coke and O. A. (Jack) Knight of OWIU—insist that discussions are coming along smoothly,

despite rumors to the contrary.

Swisher and Knight are both on record as favoring the merger, as are their respective vice-presidents; and Reuther, while denying that there's any coercion on the two unions, has been steadily exerting gentle pressure to bring the organizations together. So far, only one highly placed union officer is opposing the merger: Cecil Martin, Gas-Coke's secretary-treasurer since the union was formed 12 years ago.

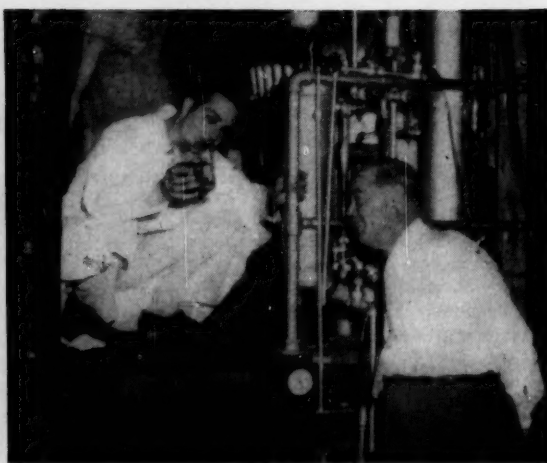
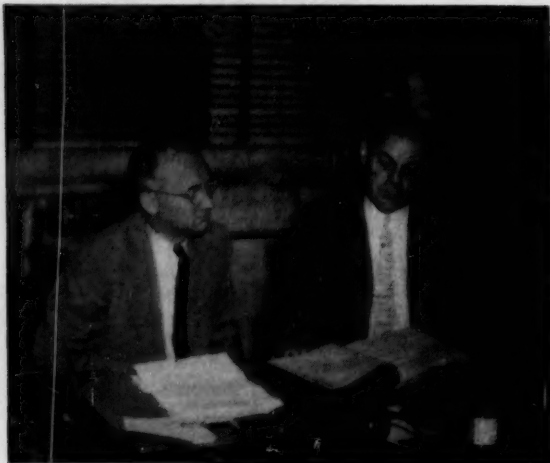
While these unification talks were under way in Washington last week, a Dept. of Justice official caught a plane from Washington to Knoxville, Tenn., under orders from President Eisenhower, and obtained a Taft-Hartley injunction against Gas-Coke's threatened strike at Oak Ridge and Paducah atomic energy plants. Gas-Coke promptly accepted the court order, kept its 4,500 atomic workers on their jobs. They want a larger pay increase than the 6¢/hour recommended by the President's Atomic Energy Labor Panel and offered by Carbide and Carbon Chemicals Co., operator of the two plants. Gas-Coke spokesmen defend the atomic workers' move as a fight for citizens' rights.

Tangle on Tape

There's no end to the litigation over pressure-sensitive tape patents, it seems this week. While similar cases are still pending in federal district courts in New York, Illinois and Missouri, Minnesota Mining & Mfg.—the maker of "Scotch" brand plastic electrical tape—now has filed five new suits charging patent infringement.

Thirteen companies and six individuals are named as defendants in the new actions, with Technical Tape Corp. of New York heading the list. That firm is involved in three of the earlier suits, as well as in the two complaints filed last week in Chicago. The other recent actions include two at Greensboro, N.C., and one at St. Louis.

Alleging infringement of U.S. re-issue patent No. 23,843 on manufacture of stretchable, retractable plastic tape for electrical use, 3-M is asking the courts to enjoin all the defendants from making or selling this product. The plaintiff also asks for damages and court costs.



NEW OWNERS: Holstein and Hendrey talk over expansion schemes . . . Hendrey inspects production units.

Two Under One Roof

Back of the recent dissolution of the Pfanstiehl Chemical Corp., Evanston, Ill. lies a story rich in the tradition of American enterprise. One group of employees has purchased all of the building assets in addition to metal division facilities; another has bought out the chemical assets, will continue to produce its products under the new corporate name—Pfanstiehl Laboratories, Inc.

In essence, the decision to split forces was initiated when Henry Babson, major stockholder and backer of the original Carl Pfanstiehl, revealed his wish to retire. Employees of the Metal Div. thereupon pooled their money and offered to buy his holdings. And general manager Arthur Holstein and Waldersee Hendrey (of Hendrey Chemical Co., Evanston)—put in their bid for the chemical division.

Now, with the dissolution completed, both successor companies have aggressive expansion plans. Pfanstiehl Labs., for example, will push a new process to produce levulose (on which patents are now pending). The new unit, due in production soon, will turn out 1,500 lbs. of levulose/month and, as a by-product, will yield gluconic acid—which can be converted to calcium or sodium gluconate.

Holstein, credited with the original idea for the process, sees a robust potential new market for crystalline levulose alone. Intravenous feedings in the U.S. each year, represent a market for 3.5 million lbs.; the honey industry says it can absorb 30-90 million lbs. per year to prevent crystallization of sugar; there's also a wide-open field in low-calorie foods. Also a comer:

derivatives—like lactones, lactone salts (for sequestering) sugar acids, etc. Company officials even point to the recent upsurge of medical interest in carbohydrates for metabolic functions as evidence that the future for Pfanstiehl Labs. looks bright. In the past 60 days they haven't been able to keep up with the demand for these sugar salts.

Still in line for emphasis—but not major expansion: the production of amino acids for sale to laboratories, academic institutes, and medical research houses.

Other Segment: On the other side of the fence, the metal workers will take over and operate the original assets of Carl Pfanstiehl's Metallurgical Corp. Main product today, as in the mid-'20s, is rare earth tipped photographic needles. Also inherited: a patent for a special type of ammonium chloride for tinning, and a zinc-ammonium chloride salt for fluxing.

"This part of the business," say employees, "was the real love of founder Carl Pfanstiehl. In the years of the company's infancy, when he was first working on the development of the alloys necessary to produce his phonographic needles, employees had to run down to Northwestern University to borrow a polariscope to check batches. Later, the Bureau of Standards had five matched polariscopes made to order in Austria—allowed the company to purchase one. Partly out of sentiment, Pfanstiehl Chemical still has it."

Compatible Tenants: For the nonce, executives say Pfanstiehl Labs. will rent space in quarters now owned by the Pfanstiehl Corp. in the building

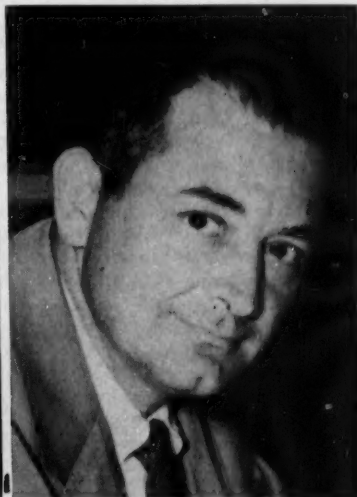
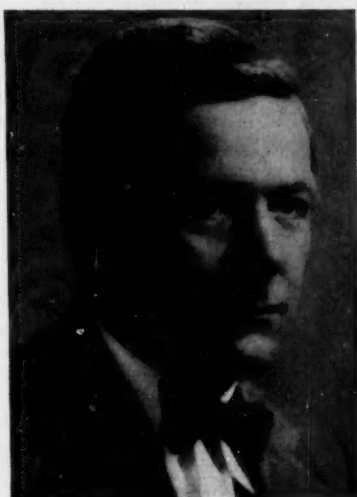
occupied by both since 1935. And though there's no sure way to chart the future of either co-occupant, spirit is running high. From top to bottom, staffers are sure that the breakup of Pfanstiehl Chemical Co. will be salubrious all around.

Food Firm Lawyer

Not from the drug industry as expected (*CW Newsletter*, July 31), but regarded as open-minded on the subjects of drugs and chemical additives, is the man slated for the new position of assistant secretary in the Dept. of Health, Education & Welfare.

Bradshaw Mintener, vice-president and general counsel for Pillsbury Mills, Inc., Minneapolis, is scheduled to take over the new office early next month. His appointment confirms the rumor that the post would go to someone with industrial experience in the foods and drugs fields; but so far, there's no evidence that he'll have any direct authority over the Food & Drug Administration. His main assignment now is expected to be in federal-state relations on health problems.

Mintener and the new FDA commissioner, George Larrick, are said to be close personal friends with considerable respect for each other. If Mintener should come to exercise any particular influence over FDA policy, odds are that makers of chemical additives for foods will have little to complain of. During his Pillsbury career, that company has either sponsored or supported programs for enrichment of flour and bread, use of chlorine dioxide as a flour bleach, and addition of fungal enzymes as an optional ingredient in bread.



Chemical & Rubber Division directors, past and present, have this to say about BDSA . . .

HATHAWAY: "industry has gotten more out of it than it's put into it."

SMITH: "injects industry viewpoint into government . . ."

MORRISON: "teamwork between government and industry groups . . . quicker solutions to mutual problems . . ."

Firm Vote of Confidence

Ask chemical executives what they think about the Business & Defense Services Administration, and you may still get answers ranging from enthusiastic affirmation to deepest skepticism. But with the new agency approaching its first birthday, the doubts of many have gone with the wind and anti-BDSAism is on the wane.

Organized last September after two months' delay caused by industry's doubts concerning the value of a new bureaucratic agency (*CW*, Oct. 3, '53, p. 13), BDSA is a new version of the Korea-born National Production Authority—with a difference. Instead of superintending controls, allocations and materials, BDSA envisions itself as chief liaison between industry and government agencies.

But it stands to reason that the way any chemical man looks at BDSA can be explained by what he wants in Washington. A market research man, for example, would find BDSA's Chemical & Rubber Div. a prime facts source.

It is this knowledge of who-what-and-where that is most valuable to many a bewildered executive who goes to Washington only occasionally.

(Companies with resident representatives doing much of their liaison work for them are naturally less dependent on BDSA.)

Conflicting Interests: Chief gripe about BDSA in the past has been the possibility that confidential business information would fall into partisan hands. But this suspicion now seems unfounded. When there is some chance of a conflict of interest, decision is usually delegated to some career civil servant. Dow's Smith, for example, disqualified himself from any decision on ammonia expansion—one of the applicants for a necessity certificate was Midland Ammonia, a Dow subsidiary.

Too, there seems to be some reluctance on the part of industry to send men to Washington and on the part of executives to serve—for fear a stint there might put them on the shelf at home. Each time a new appointment is due, the Manufacturing Chemists' Assoc., which recommends candidates to the Commerce Dept., has had trouble finding someone both qualified and willing to take the job.

On the Plus Side: For doubting Thomases, BDSA has already shown

its value in arbitrating several chemical controversies. It has played a key role in: (1) issuance of necessity certificates for construction of synthetic ammonia facilities; (2) fertilizer buying by the Foreign Operations Administration; (3) negotiations between the Army Corps of Engineers and three chemical companies for sale of the Muscle Shoals caustic-chlorine plant; (4) disposal of phosphorous oxychloride by the Army Chemical Corps.

In three of the four cases, industry complained to BDSA that government agencies were taking arbitrary action. BDSA got busy, arranged powwows between government and industry people involved. And while results might not have been everything industry wanted, the meetings cleared the air, gave each side a chance to make its point. Also, agencies got a tacit hint they could well ask industry opinion on similar problems in the future before taking unilateral action.

The fourth case is especially notable for the fact that the Army came to BDSA for help. The Chemical Corps had a hot potato, wanted to dispose of more impure phosphorous oxychloride than is normally produced in the U.S. BDSA slated meetings with oxychloride producers and con-

sumers to try to work out some acceptable solution.

The inference: government agencies may be finding BDSA a handy instrument for soliciting industry opinion.

Still Holding Out: BDSA officials frankly admit, however, that their word doesn't always carry so much weight. Requests for a breakdown of FCA fertilizer purchases from both industry and BDSA fell on deaf ears; but the same request from a House committee considering FOA appropriations got action. Another instance: BDSA made little headway discussing RFC styrene production.

One wary eye still cast at BDSA is that of Congress. The Administration asked \$7,228,000 for the agencies fiscal '55 operations; Congress doled out only \$6,258,000. Comparable expenditure during the last fiscal year was \$6,007,000.

But BDSA officials are still optimistic, feel that their program this year (a series of 50 end-use pattern presentations, similar to those already completed on benzene, toluene, sulfur and sulfuric acid) will convince any doubters that remain in government circles. Coupled with the support now forthcoming from the chemical industry, it should spell smooth sailing ahead.

EXPANSION . . .

Aluminum: Reynolds Metals Co. will build an aluminum reduction plant either in Canada's Yukon Territory or in Alaska. The site is as yet still undetermined, but the Canadian location is a more likely bet due to power availability. The company has received preliminary approval of the Canadian government to obtain power on the Yukon River, but has been refused approval of a plan to funnel water from Canada through a mountain tunnel to Skagway, Alaska.

Ammonium Nitrate: The Co-operative Farm Chemicals Assoc. (CFCA), an affiliate of the Consumers Co-operative Association, Kansas City, Mo., will formally open its \$15 million ammonia-ammonium nitrate plant at Lawrence, Kansas on Aug. 31. Capacity: 330 tons nitrate per day. The ammonia oxidation unit was designed by Friedrich Uhde, K. G., of Dortmund, Germany, which also supplied equipment for the unit.

Maleic Anhydride: The maleic anhydride-fumaric acid unit in National Aniline Div., Allied Chemical & Dye Corp.'s Moundsville, W. Va. plant is now onstream.

Sulfur: Operations of U.S. sulfur producers in Mexico's Isthmus of Tehuantepec district are bulling ahead. On the Jaltipan salt dome, more than a dozen engineers and 600 workmen, are putting the finishing touches on Pan American's \$6 million Frasch process plant. Company spokesmen say production should start by Oct. 1.

And some 15 miles away—at Minatitlán—Mexican Gulf Sulphur Co. (already turning out 200-350 tons of sulfur daily) is expanding its water-heating capacity prior to stepping up production. Gulf Sulphur Corp. is also building a new Frasch plant—due for completion next May.

than 95% of Standard's capital stock was involved in the transaction.

Two late corporate organization changes:

• Pennsylvania Salt Manufacturing Co. has established Pennsalt Chemicals of Canada at Hamilton, Ont. to service the Canadian market. The move was made in agreement with Canadian Industries, Ltd. which has handled Pennsalt metal cleaner sales in Canada for many years.

• American Cyanamid Co. has formed a Petrochemicals Sales Dept. to sell many of the products turned out at its Fortier plant in New Orleans.

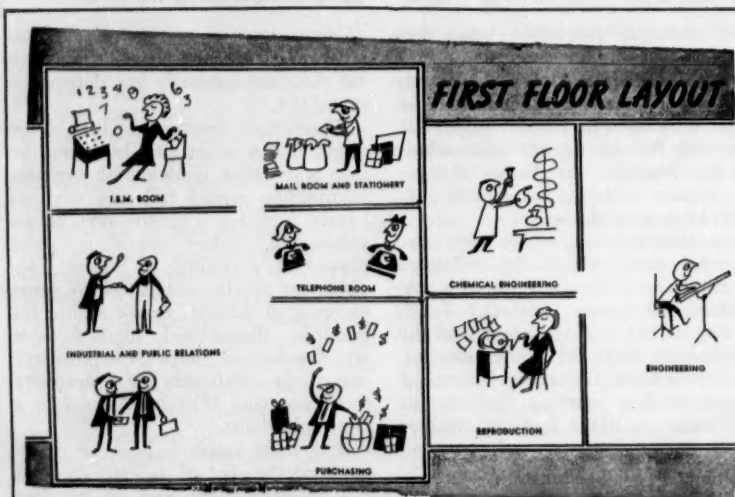
COMPANIES . . .

National Distillers Products Corp. has purchased, through a stock exchange, all the assets of the Hegeler Zinc Co., Danville, Ill. National Distillers' chief interest in the acquisition, company executives says, lies in Hegeler's sulfuric acid plant—which produces 77% sulfuric acid—output of which will be integrated with existing plants of U.S.I. Div. of Tuscola, Ill., Dubuque, Ia., and De Soto, Kan.

United Dye and Chemical Corp. has acquired the Central Standard Insurance Co., Sioux Falls, S.D. to "further its diversification activities." More

Initial steps toward the consolidation of two of the U.S.'s leading paper manufacturers — Hollingsworth & Whitney Co. and the Scott Paper Co. —took place this week. According to a statement issued by the presidents of both firms, informal discussions have been held already; a formal plan will be submitted to the respective directors at meetings to be held in the very near future.

If the proposed program is carried through, H&W's multi million-dollar pulp and paper mill at Mobile, Ala., will continue to be operated under its current management as a division of the Scott Paper Co.



Armchair Superintendents

TO KEEP GENERAL office employees informed of progress on its new administrative headquarters now being built outside Wilmington, Atlas Powder Co. is turning out a special company bulletin. Object: to spice a pretty matter-of-

fact operation with a little lightness and humor and to give workers a before-hand look at layout plans. When completed, the building will cost \$2.7 million and will feature an outdoor swimming pool, tennis courts, other recreational facilities.

FINEST IN PRODUCT AND SERVICE!

NEOLENE 400

INTERMEDIATE FOR SYNTHETIC DETERGENTS

When put to your own sulfonation test, the outstanding qualities of Neolene 400 for synthetic detergents and other surface-active agents of the alkyl aryl sulfonate type are clearly evident. Neolene 400 yields a high-performance sulfonate with superior qualities of color and odor.

Complete service laboratory and pilot plant

facilities are available to demonstrate the superior characteristics of Neolene 400. Continental Oil Company, producers of Neolene 400, are ready to serve you. We solicit your problems—large or small. *Samples and technical information based on pilot plant or commercial production, furnished by request on your letterhead.*

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Proponents

IN THEIR CRUSADE for clear water, John Beyer (*left*) and Stanley Spisiak are the pace-setters in the drive for enforcement of present New York state laws. They refuse to be deterred by the need of chemical plants in the Buffalo-Niagara Falls area to discharge certain wastes. It was Spisiak who dramatized the fish kills, blaming industrial cyanide wastes. This aroused the public, resulted in drafting of proposed federal measures to increase government intervention. Both Spisiak and Beyer advocate more stringent federal action unless local efforts improve.



WHAT KILLED THEM? Dead gizzard shad and . . .

Inquest and Aftermath

Normally, chemical executives concern themselves mainly with people when it comes to community relations, but in the Buffalo-Niagara Falls area in recent weeks they've had to worry about fish, too.

Ever since small but vociferous groups of sportsmen and conservationists first seized upon the seasonally recurring deaths of gizzard shad, alewives and other fish in Lake Erie and the Niagara River to dramatize their attacks against industrial water pollution, chemical executives flinch at the sight of bobbling dead fish. It's charged that the fish deaths are caused by industrial wastes.

So successful have the sportsmen and conservationists been in arousing the public that more than 400 ruggedly partisan residents jammed the Museum of Science auditorium in Buffalo recently for the second public hearing on water pollution in seven months. Grim-faced state officials at the three-hour session heard Stanley Spisiak, champion of the antipollutionists, assail New York State Conservation Commissioner Perry Duryea,

demanding his replacement for not enforcing the present state law.

Spisiak, a Buffalo jeweler, who is an officer of several sportsmen's clubs and chairman of the Water Pollution Control Committee of the New York State Conservation Council, also called for a change of attitude by industry, assignment of a mobile pollution unit in the Buffalo area to detect violations, stricter enforcement of the antipollution law by Conservation Dept. officials, and passage of federal laws to "put teeth" into the international treaty between Canada and the U.S. governing pollution of boundary waters.

Result of the Hue: This clamor so far has brought the introduction of no fewer than four bills in Congress to increase federal intervention in water pollution control. Most serious is H.R. 5431. It flatly forbids the discharging of industrial wastes into Lake Erie, the Niagara River, and their tributaries. If passed, it could mean virtually the end of the chemical industry in the Buffalo-Niagara area. For the industry cannot operate unless it can

discharge some unavoidable wastes.

Not only do these bills threaten the chemical industry on the Niagara Frontier (with its 135 plants employing more than 19,000 workers to turn out products valued at close to \$300 million/year) but if enacted they could also set a precedent for similar federal intervention in other states.

Bungled Public Relations: Up to now, chemical executives concede privately, industry's public relations job on pollution problems has been rather ineffective. For one thing, it has minimized an obviously bad situation. For another, it has not pointed up what individual companies are doing to abate pollution.

One instance is the way the chemical industry let Spisiak dramatize last spring's fish kills, inferring that the industry was largely to blame. He first demanded that the state determine the cause of death of these thousands of fish, then reported the presence of cyanide in the fish.

Industrialists ignored the clamor, however, until the public had pretty well "convicted" them of guilt and the threat of federal laws had developed. Then they proved that the fish had died primarily of natural causes and



alewives washed ashore touched off pollution furor.

that dead fish floating in pure water will show decomposition-derived traces of cyanide. Nor did Buffalo industry urge the Buffalo papers to photograph the vast piles of dead fish on Lake Erie shores 30 to 100 miles up the lake and upwind from Buffalo plants.

Spisiak made pollution a headline-hot issue. The Citizens Committee for a Clean Niagara, chaired by John Beyer, posted hundreds of signs along the Niagara River (they're still there) warning of industrial waste purportedly dumped into the river daily. Such signs list "6,370 pounds of phenol, 1,890 gallons of extractable oils, 10,565 pounds of ammonium compounds, 1,755 pounds of cyanide and 757,000 pounds of suspended solids." They also proclaim: "Some authorities claim a relationship between the incidence of polio and the presence of cyanide in bathing or drinking water."

What Causes Fish Deaths? Faced with the problem of defending industry at Washington hearings, Manufacturing Chemists' Assn. spokesmen—Hercules's Bruce Dickerson and National Aniline's Raymond Hess—tried to get down to basic principles.

Hess cited findings of Thomas

Langlois, director of Ohio State's Institute of Hydrobiology, who points out that the dead fish in the Buffalo area this year are mostly gizzard shad and alewives. Many gizzard shad remain in the lake through the winter, according to Langlois, and natural mortality is high. Alewives die naturally after spawning.

Discounting newspaper and radio claims that these fish were killed solely by industrial wastes, especially cyanides, Hess asserts: "We know of no convincing evidence that cyanide was the cause of the recent kills. Industry's experts have collected dead fish and samples of water from the Niagara River and have analyzed them for cyanide without finding a trace."

Industry just cannot be made the scapegoat for all the unpleasant conditions, spokesmen maintain. There is seldom any public mention—or even awareness—that pollution potentially far more dangerous to public health comes from raw sewage dumped into the Buffalo and Niagara Rivers. At times bacteria counts have been threateningly high, but the public has paid less attention to this hazard than to the more publicized concentrations

of phenol and cyanide. And, as Chairman Dickerson of the MCA water pollution abatement committee warns, the federal legislation proposed by Rep. Radwan doesn't provide for control of such effluent.

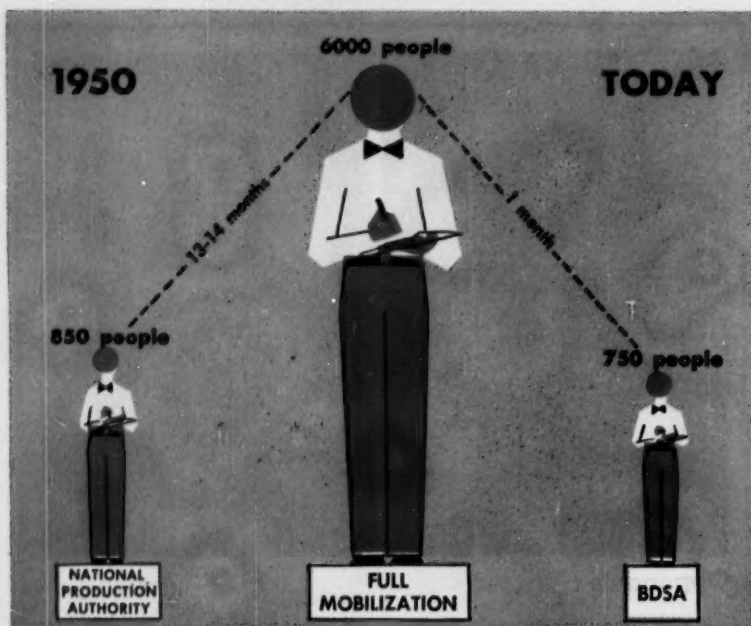
Industry's Efforts: Actually, industry in the Buffalo area, including chemical plants, has done a serious job of trying to abate pollution. The plants have spent more than \$6 million in the last five years to install equipment for reducing or eliminating pollution.

But that word isn't getting to the public. While the proposed federal bills may remain bottled up or may even be defeated in their present form, pressure will undoubtedly continue to build up unless the state law and the treaty under which the International Joint Commission (which controls pollution of boundary waters) operates are more publicly and actively enforced, and unless the chemical industry on the Niagara Frontier does a better job of letting the public know what it is doing to curb pollution. Otherwise Congress in the future may step in and superimpose new federal strictures that could pyramid government power over local initiative.



Opponents

CHAMPIONING the efforts of the chemical industry on the Niagara Frontier to reduce or eliminate water pollution, Bruce Dickerson (left) and Raymond Hess point to achievements of a number of companies in combating the problem. They cite a record of cooperation by industry with present state and federal agencies. Hess counters Spisiak's charges about the fish kills, asserts that natural causes, not cyanide wastes, are chiefly responsible. Dickerson and Hess oppose additional federal legislation, feel local initiative can lick the water pollution problem.



FULL MOBILIZATION: With a civilian reserve, BDSA might accomplish in one month what formerly took more than a year.

Target: Executive Stockpile

If talk around Washington these days is in any way indicative of things to come, the military reserve soon may have its counterpart in a civilian reserve—a pool of executives from industry trained and able to man key spots in emergency government agencies in case of war.

The chemical industry, which has been sending its fair share of executives to Pennsylvania Avenue, took a look this week at the first public proposal for an organized 5,000-man reserve—and approved with cautious enthusiasm.

Main features of the executive stockpile program now being recommended by the nonprofit, nonpolitical National Planning Assn.:

- Recruitment of 5,000 executives and specialists from business, labor, agriculture, scientific societies, and universities—men all qualified for top administrative posts or senior positions dealing with industrial production, commodity allocations and price controls, procurement, personnel.
- Two-week training courses every year in Washington for "reservists" to learn the intricacies of civil service procedures, budgetary methods, and bewildering government procurement regulations.
- No hard-and-fast commitment to service for reservists.
- Administrative responsibility to

the Office of Defense Mobilization.

The idea of a talent pool is not, of course, new in government and chemical circles. Many agencies have long kept rosters of available consultants; Commerce Dept. officials have cherished the idea for some time; and ODM has long been thinking in terms of a modest 300-man reserve. But that an "executive stockpile" was long overdue has often occurred to many businessmen who fought the hectic battle of the Potomac during World War II—when total personnel in emergency agencies swelled immensely (from 75 in 1940 to 193,252 in 1943).

An Old Hand: Executives like Carbide's John Field, for example, an old hand as a "WOC" (without compensation), and now on a six-month tour as assistant administrator of the Business and Defense Services Administration, call the idea of a civilian reserve sensible, say it's industry's duty to help the government. While he thinks industry in general may not be quite ready to accept NPA's two-week training proposal, Field points out that the mere fact several chemical men are BDSA WOCers indicates the chemical industry at least may be amenable to NPA's proposal.

Dow's Harold Smith, just completing a stint as director of the

Chemical & Rubber Division of BDSA, regards a civilian reserve as important as a military reserve, heartily favors some kind of recruitment and training program, thinks periodic refresher courses for veteran WOCs essential.

Belying the traditional bitter jibes about bureaucracy and red tape, many ex-WOCers, it seems, want to keep in touch. One group of Commerce Dept. alumni get together regularly two or three times a year. Of the 200-odd self-styled "Washington Has-Beens" who last met in New York, the majority were chemical people.

A Lion's Share: Obviously, no reserve program can really get off the ground unless employers are willing to farm out some of their best talent to Washington periodically. Although figures on the chemical industry's contribution during two wars are hard to come by (they lie buried in mountainous government files in St. Louis), it plainly has been more than cooperative.

Typical: one firm reports it gave up a dozen of its top men for the duration in World War II, had 60 people serving periodically on 17 different committees, provided 47 consultants during the Korean war, now has 8 administrators on call as consultants.

Another company says that it has had "every member of the brass" on a consultative basis at one time or another, asserts it will certainly go along with any reasonable plan to set up a civilian reserve.

Enthusias another: "It sounds supremely workable—provided it's not inflexible like military service."

But others are more cautious, point out that the NPA plan in its current form may have some drawbacks.

- The two-week training period for recruits could be inadequate. Says one company spokesman: "Two weeks is less than futile; more than that, impossible."

- The 5,000-man goal may be too ambitious. (NPA arrived at the figure on the basis of 2-3% key men for a peak total of 200,000 personnel in emergency agencies.)

- A host of irritating problems like methods of payment, conflict-of-interest statutes, civil service-reserve relations, may eventually result in far less elaborate machinery than NPA envisions.

But whatever comes out of the policy mill, within reason, is virtually assured the careful and cooperative consideration of chemical executives.

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MAJOR MARKUPS ON CHEMICAL CONCERNS

(U. S. chemical companies whose stock was vested by Alien Property Custodian during and after World War II under Trading-With-The-Enemy Act of 1917) (Dollar figures in millions)

Company	Common Stock Vested	Date of Seizure	Book Value at Time of Vesting	When Sold to U. S. Citizens	Sale Price	Apparent Increase in Value	Former Owner
American Potash & Chemical Corp.	90.8%	Oct. '42	\$18.5	Mar. '46	\$15.5	-3.0	Wintershall A. G. and Salzdetfurth A. G.
Buffalo Electro-Chemical Corp.	45.98%	July '42	0.9	June '51	4.3	3.4	13 German nationals
General Aniline & Film Corp.	98%	Feb. '42	41.6	(still held)	100*	54.8	Interhandel and others
General Dyestuff Corp.	100%	June '42	3.6	Oct. '53**	—	—	E. K. Halbach and others
Jasco, Inc.	50%	Mar. '42	0.01	May '53	1.2	1.19	I. G. Farben
North American Rayon Corp. and American Bemberg Corp.	Majority	Aug. '47	12.9	Dec. '48	17.1	4.2	Algemeene Kunstzijde, Vereinigte Glanzstoff, and J. P. Bemberg A. G.
Rare Chemicals, Inc., and Boehringer Corp.	100%	July '42	0.12	Sept. '42	0.12	0.00	***
Rohm & Haas Co.	26%	Aug. '42	3.1	Jan. '49	9.2	6.1	Dr. Otto Röhm
Schering Corp.	100%	Apr. '42	1.2	Mar. '52	29.1	27.9	Schering A. G.
Totals for 9 chemical concerns:			\$81.93		\$176.52	\$94.59	

* Approximate net worth, 1954.

** Merged into General Aniline & Film Corp.

*** Formerly owned by a U.S. citizen who later won court settlement.

Big Prize in Alien Property Plan: Chemicals

A new nest of hornets has been stirred up in Washington—and the buzzing is making some members of the U.S. chemical industry a trifle uneasy.

Up to this week, only a few people were paying much attention to the bill introduced three months ago by Sen. Everett Dirksen (R., Ill.) for return of alien property to the former owners; but now that the smoke has lifted from the atomic energy filibuster and the

McCarthy censure debate, all the capital gladiators—congressmen, columnists and lobbyists—are choosing sides and weapons in this new political free-for-all.

To U.S. chemical and pharmaceutical companies, one facet of the Dirksen bill that gleams with an ominous luster is this: German, Swiss and Dutch chemical interests—which already are putting up powerful competition in world markets—stand to gain fresh strength if this bill is passed.

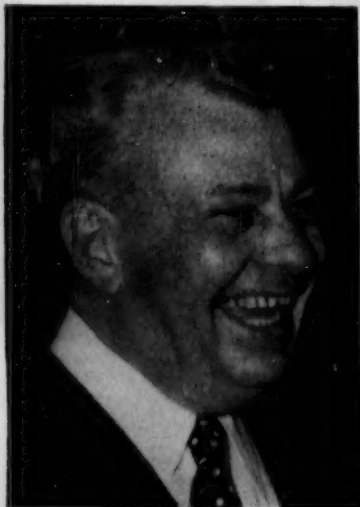
How It Works: Congress probably won't get around to voting on this bill during the session that's expected to wind up this month. But the Dirksen bill—sponsored in the House by Rep. Katharine St. George (R., N.Y.)—is sure to come up again when the 84th Congress unlimbers its gavels next January, even though President Eisenhower last week came out against the measure.

Chemical properties (see table, above) make up the biggest single block of assets taken over by the U.S. government after Pearl Harbor. Dirksen, holding that confiscation of private property is inherently wrong, proposes that these assets—or the cash equivalent—be returned to the former owners. If his bill should be enacted into law, those European chemical interests would receive:

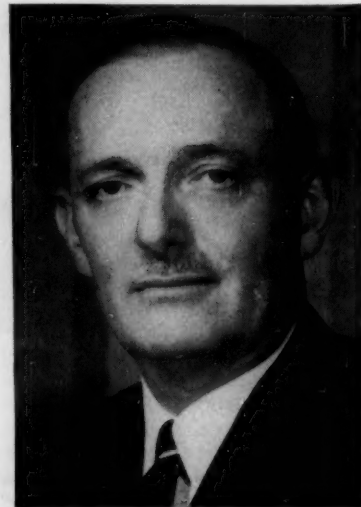
- More than \$75 million in cash,

as compensation for corporate stock that's already been sold to U.S. companies and citizens (plus dividends that have been received by the government, minus whatever "custodial fees" the government will charge for having looked after these properties for varying periods of time).

• At least temporary control of General Aniline & Film Corp., most valuable single property on the list,



SEN. DIRKSEN: In current vesting program, he sees "Communist plot."

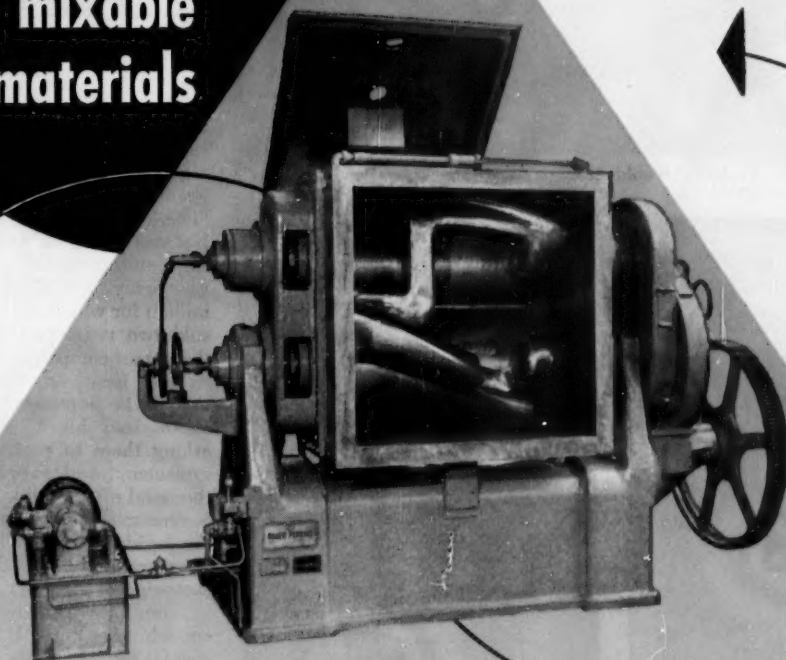


SCHERING'S BROWN: In property return proposal, he sees "injustice."

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Plastisols

Blending

Paint and Varnish

Rubber Dispersions

Carbon Products

Pigment Dispersion

Chemical Reactions

Rubber Products

Dog Food

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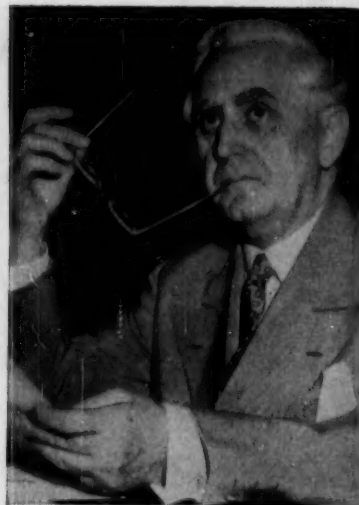
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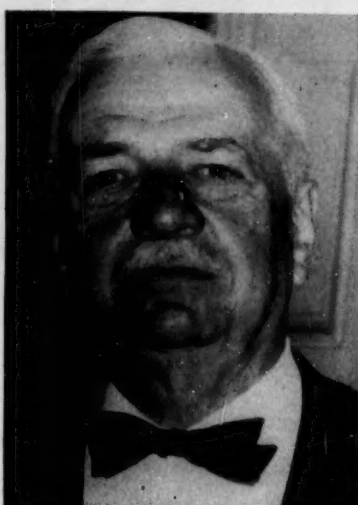
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GAF'S LINDEN (N.J.) PLANT: Would foreign ownership bring "disintegration"?



EX-OAP CHIEF CROWLEY: To GAF employees, a promise of U.S. control.



NEW CUSTODIAN TOWNSEND: To all congressmen, a plea for U.S. control.

which has not yet been disposed of.

- Title to some 1,300 unexpired chemical patents that up to now have been available for royalty-free licensing to U.S. firms.

- Rights to the use of numerous chemical trademarks in the U.S.

Booster Shot: All together, these would constitute an invigorating injection for the chemical industries of those three bustling nations. Also, worried opponents of the bill are quick to point out that under its provisions, GAF conceivably might be repossessed by I. G. Farben*, the German chem-

ical trust that now has been cleft into five smaller companies but which might be permitted to revive the old grouping in 1956.

As a government holding GAF is not allowed to speak for itself in this war of words. But both the Alien Property Custodian and GAF employees have raised their voices against the bill. Col. Dallas Townsend, assistant attorney-general handling the job formerly held by Alien Property Custodians, asserts that S. 3423 is unfair to U.S. companies and taxpayers, and that it violates certain agreements

with West Germany and our NATO allies. GAF employees remind Congress of the promise they got in 1942 from Alien Property Custodian Leo Crowley that "the company shall never be allowed to return to German ownership." Research workers of GAF's Ozalid Div. declare that "Foreign ownership, even for a few weeks, would result in irreparable loss of advanced technical know-how."

One favorite argument of the anti-Dirksen-bill faction is that the former owners don't deserve all the increased value of their old properties. This increment is largest in the case of GAF, which last year absorbed its \$7 million sales affiliate, now is worth more than twice its 1942 book value.

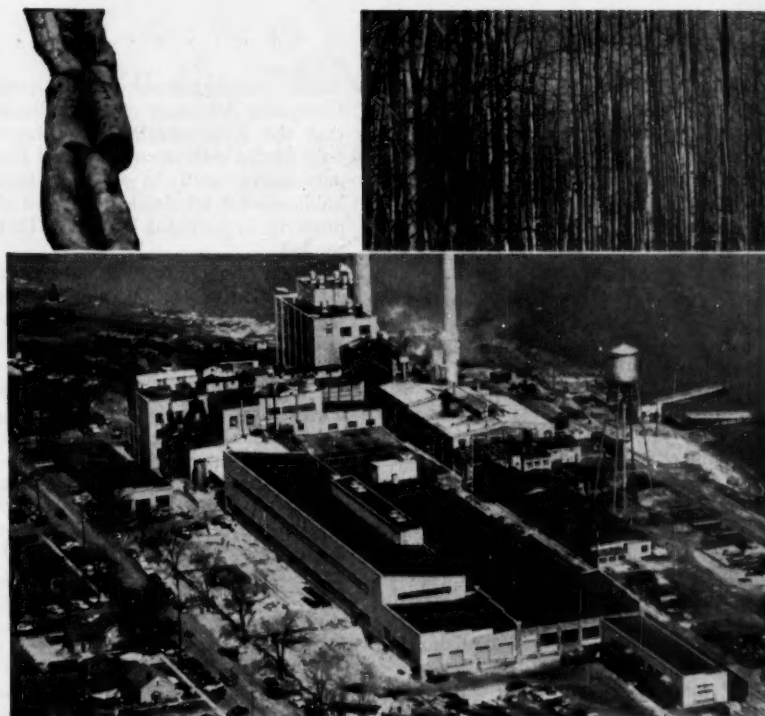
'Wartime Windfall': While GAF management is mute on this topic, the president of Schering Corp. is taking the lead in opposition to the bill. Francis Brown, who has handled Schering both under government control and now under its private ownership, strongly objects to the plan to give Schering A. G. of Berlin the \$29.1 million for which the vested stock was sold two years ago, considering that the parent company had offered to sell its New Jersey offspring for only \$1.3 million in September, 1941. Brown circularized his 15,000 stockholders asking them to protest to their congressmen, and apparently several thousand of them did. Key Republican congressmen have begun to worry that the legislation might become another "giveaway" issue in the forthcoming campaign.

From Brown's standpoint, it's bad enough that the U.S. government should go out of its way to give a nearly \$28 million "wartime windfall" to a company that's competing vigorously against his own firm in various other countries. But what vexes him even more about the Dirksen bill is the fact that it might hand back to Schering A. G. half a dozen patents* now of primary importance to the U.S. concern. When Schering stock was auctioned in 1952, the government held out those patents—which were of German origin—and transferred them into the pool for royalty-free, non-exclusive licensing. If these patents should go back to their former owner, New Jersey Schering's licenses could not be revoked, but Schering A. G. would be free to compete in those fields in the U.S.

And finally, Brown asks why he and all other U.S. taxpayers should be required to reimburse those former

* GAF was organized by Farben in 1927, and its debentures were guaranteed by the German company up through 1939; but when the late President Roosevelt ordered GAF's seizure in 1942, nearly all of the common stock was found to be registered under the name of Interhandel and other Swiss and Dutch holding companies. Interhandel now is suing for recovery of its shares, also, is working energetically for passage of S. 3423. In what backers of the bill call "Farbenphobia," opponents warn that while Interhandel might be required to sell its stock to U.S. citizens within one year, those buyers might turn out to be a "front" for I. G. Farben. Dirksen admits this could happen, but says it's impossible to guard against every contingency.

* These patents—whose expiration dates range from 1954 to 1963—cover various hormones, basic oxidation method of manufacturing corticosteroids and intermediates, an X-ray contrast medium, and a preparation for eye treatment.



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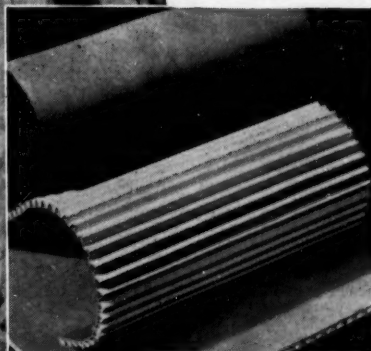
American Box Board Company operates the nation's largest continuous semichemical pulp mill, at Filer City, Michigan. High-grade .009 corrugating medium is made from aspen pulpwood, which formerly was considered worthless. The mill's capacity is over 350 tons per day on a continuous basis . . . aspen fibers are converted from wood to paper in less than one hour.

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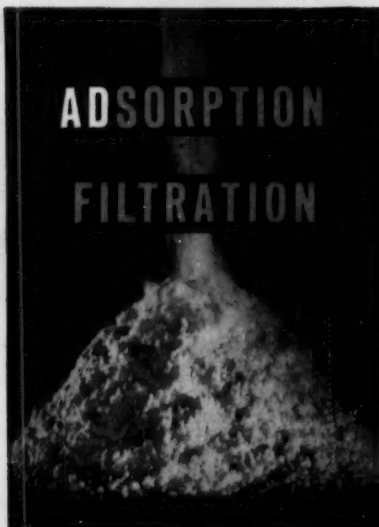
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owners when the West German government already has agreed to pay its citizens and companies for loss of their overseas assets. This was part of the World War II settlement: instead of taking reparations from the defeated Axis powers, the Western allies agreed to take over German, Japanese and Italian assets located on allied soil and sell them to raise money for war damages sustained by allied servicemen and other citizens. Brown says ducking out on this agreement might antagonize allied governments, estimates it would necessitate a nearly \$300 million levy on U.S. taxpayers to meet war damage claims.

Seizure Precedent Feared: Other U.S. chemical companies whose stock was vested are not taking any firm position on the bill at this time. They figure that passage of the bill wouldn't directly affect them except for the possibility of increased competition from abroad and the general tax bill at home.

But Dirksen—a conservative, 20-year Congressional veteran who now heads the National Republican Senatorial Committee—feels that all U.S. manufacturers with overseas branches have a stake in his bill. He contends that "billions of dollars of U.S. investments abroad are jeopardized by this policy of confiscation, which sets an unfortunate precedent for similar action against our own investors by foreign governments."

His other major point in favor of S. 3423: return of assets would strengthen the free world's defense against communism; "West Germany can be expected to become an effective partner in any Western alliance only so long as the grassroots of that nation support the alliance."

Red Plot Charged: The senator holds that the World War II property auction program came as an abrupt about-face in this nation's "historic policy of nonconfiscation of private property in war and peace." In a nearly two-year study of that program, his subcommittee searched for an explanation of that policy switch.

"We hadn't been in this investigation long," Dirksen told CW, "before we came across the trail of Harry Dexter White, which led us to suspect Communist influence on postwar policy toward ex-enemy assets." This policy, he charges, was designed to harmonize with the Morgenthau plan to strip Germany of all industrial and military might.

Originally, President Eisenhower tended to agree with Secretary of State Dulles that the Dirksen bill might be all right in principle; but his

recent correspondence with German Chancellor Adenauer clearly indicates that the Administration now favors only partial restitution of vested German assets, mostly to owners of small holdings—not wholesale return of all property as provided for in the Dirksen bill.

Eisenhower's move will halt any decisive action on the measure this session. But proponents of the measure have been fighting this battle for a long time. They're backed by powerful Swiss and German-American interests, have attracted the support of the American Legion, and won't quit without a fight. Their determination—and the value they set on the chemical and other assets concerned—can be yardsticked by the estimate of Capitol Hill observers that around \$200,000 has been spent so far on lobbying and public relations support for the bill.

More to Follow?

The Food & Drug Administration this week is readying an order to remove three coal-tar colors from the list of dyes approved for food, drug and cosmetic use.

The order comes as a result of tests on the dyes that FDA has conducted during the past few years, and follows a hearing on the matter last January.

The details of FDA's action, however, aren't the point over which chemical men are really worried. They see in the action a long-range public relations problem for food and chemical industries and for the Food & Drug Administration itself.

FDA, which has been conducting animal feeding tests on the whole series of colors approved for food, drug and cosmetic use, has now initiated further tests on some of the colors. Some agency officials feel that it will probably not start any further decertifications until these tests are complete, which won't be before 1957. While FDA officials will only say that they are studying "subtle reactions" in these new tests, observers feel that these may include possible carcinogenic properties.

Industry lawyers have been taking the position that down-certifying is permissible under the law. But since this is the first decertification case, they are anxious that no precedent be set that would allow FDA to decertify a color for all three uses—foods, drugs and cosmetics—on the grounds that it is harmful for one use. Possible later recertification, they feel, would not change the legal precedent or complete decertification.

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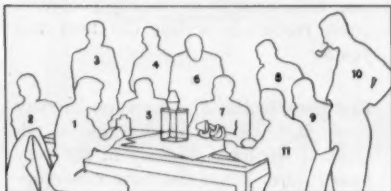
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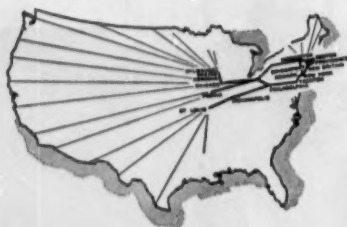
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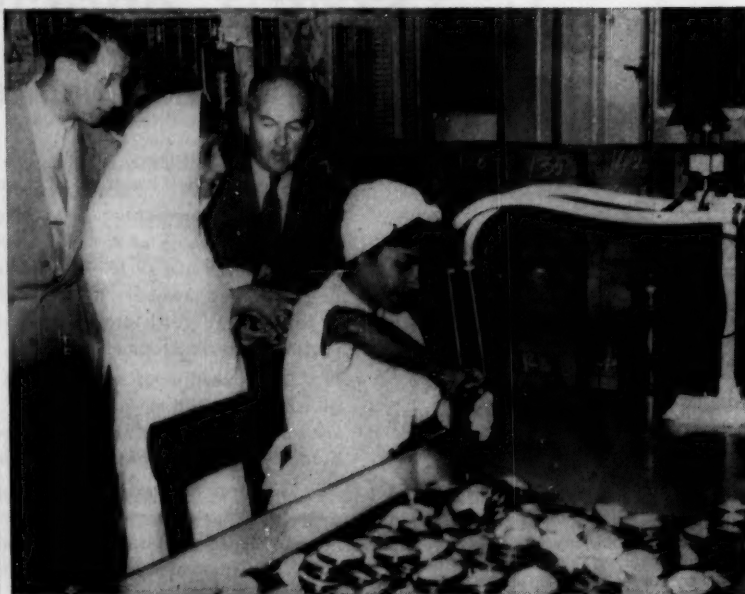
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BUSINESS & INDUSTRY



U. S.-INDIAN ACCORD: India's Minister of Health, Rajkumari Amrit Kaur (center) tours Parke-Davis's new plant in Bombay.

FOREIGN.

Pharmaceuticals/India: Tangible proof of the goodwill attitude of U. S. companies building plants in underdeveloped areas was evident at the recent opening of Parke-Davis' plant in Bombay. The company donated 50,000 Kapseals of chloromycetin and 100,000 Camoquin tablets to the Indian government, junketed Indian officials around the laboratories.

Chemical Sales/Germany: Sales of West German chemical companies in the first half of 1954 are now estimated at 1,156 million marks—about 30% ahead of last year's records. Export figures show that the proportion of sales to European customers is still on the rise, while shipments to the U.S. are gradually dropping off. Exports to the U.S. from January to April totaled 47 million marks as against 86 million marks in the same period in 1953.

Pharmaceuticals/Argentina: The latest addition to Argentina's expanding pharmaceutical industry is Laboratorios Diva, Argentina, S.R.L.—a recently established affiliate of the Swiss firm Diva A.G. of Zurich.

Construction of manufacturing facilities will start within the next few months; meanwhile specific products (mainly vitamin F 99—much of which has been imported into Argentina from the U. S.) will be manufactured in Argentina in cooperation with Medex, S.R.L.

For the time being, raw materials will be imported from Switzerland, but company executives say they expect to be able to use locally produced basic materials within the next 2-3 years.

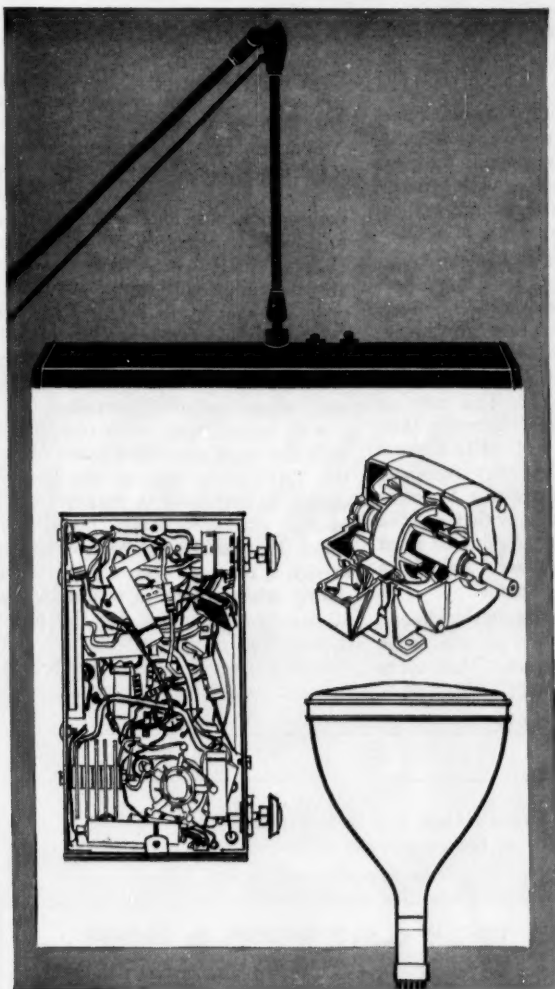
Fertilizer/India: Plans are under way again in India for construction of additional fertilizer capacity in the very near future. Why: domestic consumption is now rated at 400,000 tons/year—far outstripping production, placed at 260,000 tons.

Causing further worry to Indian government officials is the fact that stocks of fertilizers, which amounted to some 74,000 tons at the beginning of 1953, are dwindling.

Actual tenders for construction work have not as yet been issued, but observers in Bombay are predicting that bids for two plants at least (in the southern provinces of Punjab and Rajasthan) to cost over 120 million rupees will be put out before fall.

DDT/India: A plant to manufacture DDT and other insecticides will go into production soon near Delhi, India. Estimated output: 700 tons of insecticides annually—expected to be used mainly for the antimalarial campaign in India sponsored by the Ministry of Health.

Plans for the new facilities were finalized two years ago, in a joint program launched by the government of India and the UN Technical Assistance Administration.

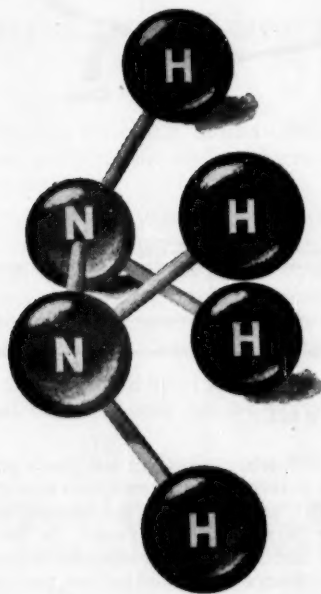


from Hydrazine... new light on old soldering problems

For greater efficiency and economy in the production of electrical and electronic components, a remarkable new series of soldering fluxes, called CORONIL, permits more effective work and fewer rejects. Developed by the McCord Corporation, these new fluxes are based on compounds of hydrazine; they are non-corrosive and can be used without hazard. They remove oxides and other films from most of the commercially used metals such as copper and brass—as well as others—and are particularly applicable to electrical work where non-corrosive soldering is essential. In addition to this field, these CORONIL fluxes are used in the manufacture of automotive radiators and other heat exchangers, oil strainers, and carburetor floats.

from Hydrazine... new fields for chemical research

Through greatly diversified research, more and more new applications of hydrazine are being discovered. In addition to its use in fluxes, hydrazine is an important component of plant growth regulators, and an effective scavenger of oxygen in boiler feed water. As a chemical capable of reacting with a wide variety of both organic and inorganic materials, hydrazine is the starting point for countless hydronitrogen compounds. Perhaps you could use the latest information on hydrazine and its many derivatives and how they might apply to your field of interest . . . if so, why not write today?



OLIN MATHIESON CHEMICAL CORPORATION
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LABOR

On the NLRB Front: Members and staff employees of the National Labor Relations Board have been in the news almost daily this month, with hearings and decisions of consequence to chemical companies of all sizes.

- An NLRB ruling that employees who strike because of their employer's alleged unfair labor practices are eligible for reinstatement despite the no-strike clause in their contract has been upheld by the U. S. Circuit Court of Appeals at New York. This puts an end to the controversy between Mastro Plastics Corp. and AFL Federal Union 22045, unless the company seeks a hearing before the Supreme Court. The court reasons that a strike against an unfair labor practice must be considered in a different light from a strike for economic gains.

- NLRB is preparing to decide one of those "craft" unit or plantwide bargaining unit disputes that often arise in chemical works. This one is

for the Savannah River atomic energy project being built and operated by Du Pont near Aiken, S.C., for the Atomic Energy Commission. One union has petitioned for recognition as bargaining agent for maintenance employees only, and another union wants to represent the plant's railroad crews. Du Pont holds that the only appropriate bargaining unit would include all wage-roll employees engaged in both production and maintenance activities, arguing that "complexity of the work demands a high degree of integration and cooperation of all personnel."

- A union must be in compliance with the non-Communist provisions of the Taft-Hartley Act at the time it claims to represent a majority of a plant's employees, the board has ruled. If it isn't, an employer is free to sign a contract with a rival union during what otherwise would be the 10-day "grace" period for the union making that claim.

- When several employers are associated in a joint bargaining group,



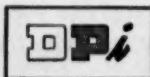
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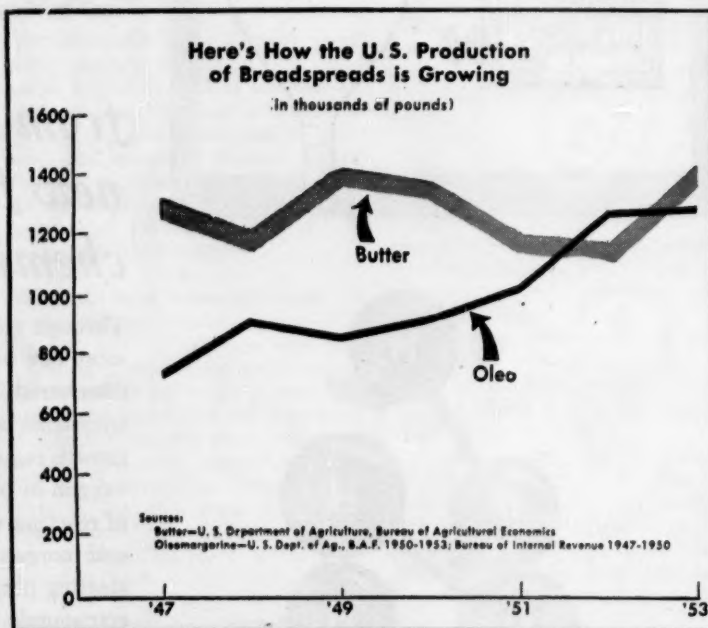


Table Turnover

MARGARINE PRODUCERS, who failed to match the butter makers' record last year (*see graph*), may turn the tables again before the end of 1954. Figures for the first six months indicate that total margarine output is running almost 7%

ahead of last year's pace; per capita consumption is now expected by government sources to run close to 8 lbs./person in the U.S. That spells good news to cottonseed, soybean oil makers, producers of colorants, vitamin additives, and lecithin.

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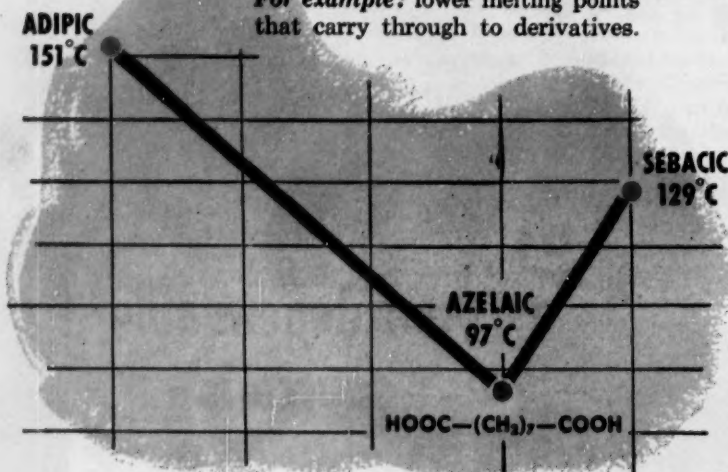
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Melting Point, °C	151	97	129
Boiling Point, °C at 100 mm.	265	286	294
Water Sol. at 20°C, G/100 gm H ₂ O	1.44	0.24	0.10
M. P. of Amides, °C	220	175	210
M. P. of Anilides, °C	235	185	198
Freezing Point of 2, ethylhexyl esters, °F*	-15	-49	-8
Freezing Point of 3, methylbutyl esters, °F*	-90	-110	-67
Freezing Point of 2, ethylbutyl esters, °F*	-44	-53	+1

*Bried, E. M., et al., Ind. Eng. Chem. 39: 484 (1947)

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B & I

and a union with which they deal throws a strike at any one of the employers, the other employers now may "lock out" members of that union at their own plants. The board says that a strike against one member of an employer bargaining association carries with it "an implicit threat against the other members."

• Another switch on past NLRB policy comes in the "freedom of speech" field. An employer now may talk to employees about their union membership if his purpose is merely to ascertain whether a union actually represents a majority of workers, and if he is careful not to discriminate against any employee on account of union affiliation.

• In a move to spike "quickie" strikes, the board slapped the Oil Workers International Union (CIO) for its maneuvers against Lion Oil Co. NLRB says that "strikes to alter the provisions of a firm contract must await the termination date," regardless of the T-H clause about 60-day strike notice.

NLRB, by the way, still has a heavy backlog of cases, despite the burst of activity this year. Figures for the first two quarters this year:

	1st Quarter	2nd Quarter
Plant elections held . . .	913	1,217
Decisions issued . . .	456	486
Complaints issued . . .	144	168
Elections requested . . .	1,956	1,982
Charges filed	1,512	1,584

Good News Dept.: Things are looking up for chemical employment. At Buffalo, N. Y., Allied's National Aniline Div. has recalled to work about 50 employees who had been laid off last winter and spring, explaining that the recall is necessary because of increased production schedules. A company spokesman indicated that other workers will be called back soon.

And at Deepwater, N. J., Du Pont has categorically denied rumors that production might be curtailed at the Chambers Works because of the drought-inflicted water shortage. Management says that if the dry weather continues into next month, the company may supplement the regular water supply with water from other sources.

Gas - Coke Candidates: Elwood Swisher, who was elected president of the United Gas, Coke & Chemical Workers (CIO) by the narrow margin of 414 to 410 at the 1952 convention, seems to be facing another close fight in his bid for re-election at this year's convention. Joseph Appelbaum of St.

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"His shadow? Oh, it'll be along later!"

POLYETHYLENE
PROGRESS
REPORT:



More than 68 trans-Atlantic trips have been made by Spencer executives in studying the operations of Imperial Chemical Industries, Ltd., of London, pioneers in polyethylene. Spencer's new \$14,000,000.00 polyethylene plant at Orange, Texas will operate under ICI patents, with operations beginning in 1955.



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Consider aerosols yourself. Examine the possibilities of using this modern method of packaging some of your own products. There are many contract loaders who will package your aerosols to specifications in any quantity. And should you want technical assistance, write to us. An interesting booklet on aerosols, "Package for Profit", is yours for the asking. Send the handy coupon for it today. E. I. du Pont de Nemours & Co. (Inc.), "Kinetic" Chemicals Division, Wilmington 98, Delaware.







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B & I



ST. LOUIS' APPELBAUM: For top post in Gas-Coke, a new challenger.

Louis, executive board member for District 8, is the new challenger for the top office. The convention is to be held Sept. 13-17 in St. Louis.

Principal nominations from local unions:

For president—Swisher, 98; Appelbaum, 84.

For vice-president—Joseph Joy (incumbent), 153; Robert Buchanan, 14.

For secretary-treasurer—Cecil Martin (incumbent), 96; Jack Curran, 86.

L E G A L

Too Big to Duck: When you get to be among the top 10 manufacturers in the country, you figure that it's a lucky day when somebody doesn't file a new suit against you. Latest litigation to come Du Pont's way is a copyright action in U.S. District Court, New York. Plaintiff is Marjorie Barstow Crumie, who says her book titled "My Dear Lady" was partly copied in Hollister Noble's "Woman With a Sword." Accordingly, she's suing that second author for alleged plagiarism: Doubleday & Co. for having published the second book; Sears, Roebuck & Co. for having distributed the book through a book club; and Du Pont for having sponsored a radio broadcast based on "Woman With a Sword." Other defendants are Batten, Barton, Durstine & Osborn for having prepared the radio program and the National Broadcasting Co. for having transmitted it.

Two Decisions: Violation of export and pollution regulations are condemned in these cases:

• Alleging irregularities in ship-



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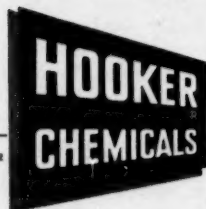
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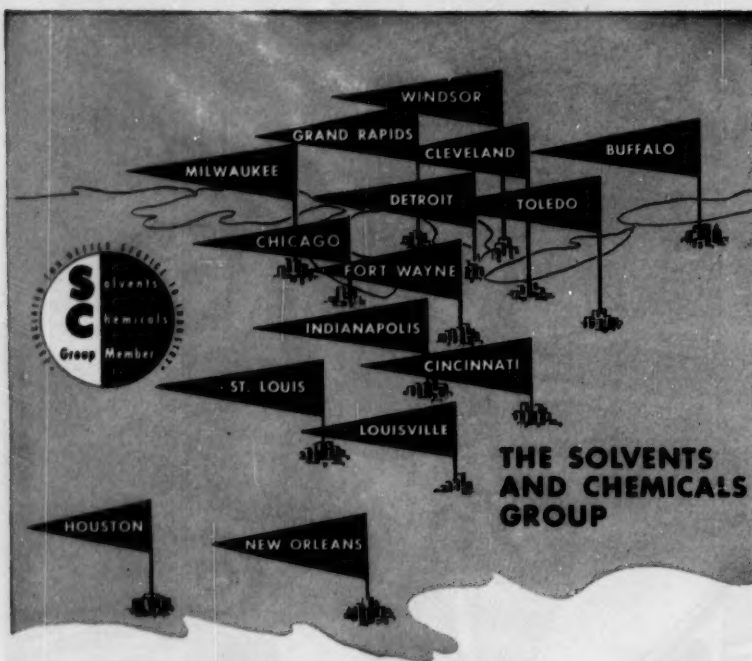
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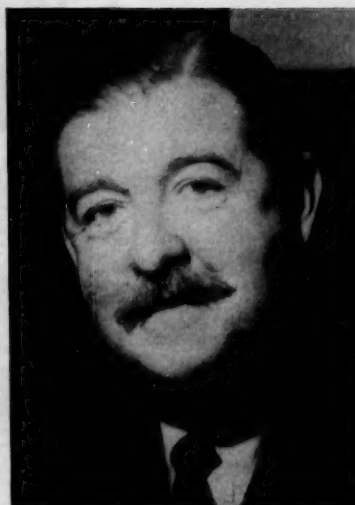
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B & I



JUDGE MURPHY: On McKesson & Robbins pricing pacts, no quick negation.

ment of sulfathiazole, dihydrostreptomycin, chloromycetin and penicillin to the Orient, the Bureau of Foreign Commerce has "severely censured" Pacific States Laboratories, Inc., of San Francisco, and has revoked all export licenses held by two former officers of that company. BFC charges that the principals made false statements in their applications for export licenses, concealed the true identity of a consignee, and evaded a regulation calling for a license to ship more than \$100 worth of chloromycetin to a single consignee.

• In Baltimore, a magistrate in Housing Court levied a \$300 fine against the Glidden Co. for "repeated discharge of acid gases" from its paint plant there. An air pollution control expert said the sulfurous gases come from the manufacture of titanium dioxide pigments. The company is building a tower in an effort to curb the contamination.

• **Fair-Trade Test:** Federal Judge Thomas Murphy has turned down the government's motion for a summary judgment in the civil antitrust case in which McKesson & Robbins is accused of having made and enforced minimum price resale agreements with competing firms. M&R has admitted having the price contracts with various wholesale and retail drug houses, but insists that there's no significant competition between its wholesale division and any of those contracting companies. After getting M&R to itemize transactions at issue for a recent 12-month period, the Justice Dept. moved for a quick decision.

Cyanamid's

No. 7 of a series
of advertisements

ACRYLO-NEWS

AERO* Acrylonitrile, a highly stable bi-functional chemical, is finding increasing use as a reactive intermediate. Its versatility is indicated by its use in the preparation of pharmaceuticals, insecticides, surface active agents, and many other useful products as well as by direct application in the broad fields of rubber,

plastics and textiles. Its polymers and copolymers can be formulated to add many desirable properties to today's products and to create interesting new products for the future. The following items and abstracts, gathered from many sources, indicate a few facets of current research with this versatile chemical.

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DID YOU KNOW THAT ACRYLONITRILE can be halogenated or admixed with carbon tetrachloride and in proper proportions is an effective fumigant? The mixture is used for direct application to milling, bakery and food processing machinery; for fumigating grain, tobacco and dried-food products. Obtainable from Cyanamid's Agricultural Chemicals Division or licensee.


(Some or all of the above items are covered by U.S. or foreign patents)

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Should you wish a more complete bibliography of current literature and new developments concerning acrylonitrile, we shall be glad to place your name on our mailing list.

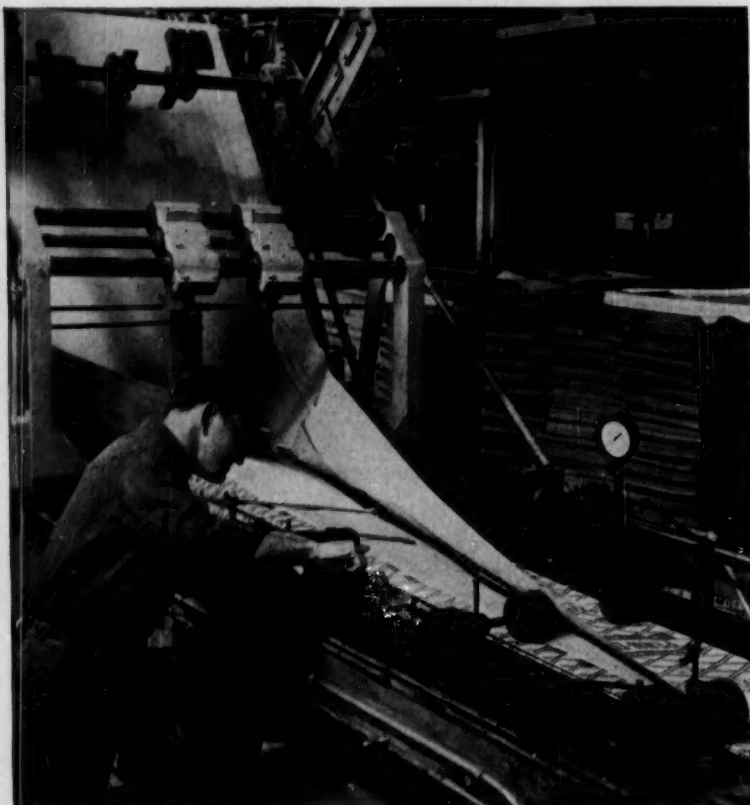
As the pioneer producer of this exciting vinyl monomer, American Cyanamid has expanded its production facilities to assure users adequate supplies at low price. Write for technical assistance in your acrylonitrile research.

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PETROCHEMICALS DEPARTMENT
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No. 4 of a series
How Bemis makes
GOOD multiwall bags for you



Herman Johnson, who is in charge of this big tuber at the Bemis Multiwall Plant in Peoria, joined Bemis in the tubing department nine years ago and worked up to his present capacity. His job is one of the most important in a multiwall plant.

Experienced Hands Run Our Tubers!

Tubers—the big machines that fold and paste the multiple kraft plies—are the heart of multiwall bag making. Running, they look pretty automatic. But you don't learn to run a tuber by reading an instruction manual. It takes long experience, knowing eyes, deft hands, to keep the plies properly nested and paste properly applied . . . and to control the many other factors that affect the performance of the finished bag. We've been making multiwalls for twenty-seven years . . . so there's plenty of bag-making experience in our twelve multiwall plants strategically located coast to coast.

Bemis



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B & I

In saying "no" to that request, Judge Murphy left an opening for the government to try to prove that the M&R agreements tend to curtail competition.

New Suits Filed: Among latest law-suits relating to chemical companies:

- Illinois Attorney General Latham Castle has filed contempt of court proceedings against National Petro-Chemicals after Chief Sanitary Engineer C. W. Klassen reported that tests showed pollution in the Kaskaskia River between July 20-26. Klassen acknowledges that the recent pollution might be the result of gradual dissolving of sludge from last winter's contamination.

- A taxpayer's suit has delayed payment of the \$897,465 that Louisiana admits it owes to Jefferson Lake Sulfur Co.; so that company now is asking a court to order the state to pay.

- In Dallas, the Central Chemical Co. has brought suit against Davies-Young Soap Co. of Dayton, O., charging a breach of trust in offering a special liquid hand soap to other dealers.

- The widow of a construction worker is suing Dow Chemical and two contracting firms for \$101,500. She alleges that her late husband was electrocuted while working on a construction job at Dow's Freeport, Tex., plant two years ago.

KEY CHANGES . .

H. O. Kauffmann, to the board of directors, and **John F. Shea**, to secretary and treasurer, Buffalo Electro-Chemical Co., Inc., division of Food Machinery and Chemical Corp., New York City.

Joseph R. Stevens, to vice-president and operating manager; **Ralph A. Clark**, to vice-president, sales; **Leslie W. Garner**, to vice-president and controller; **Anthony J. Ratichuk**, to manager of service operations; and **Elmer C. Larsen**, to vice-president and technical director, J. T. Baker Chemical Co., Phillipsburg, N.J.

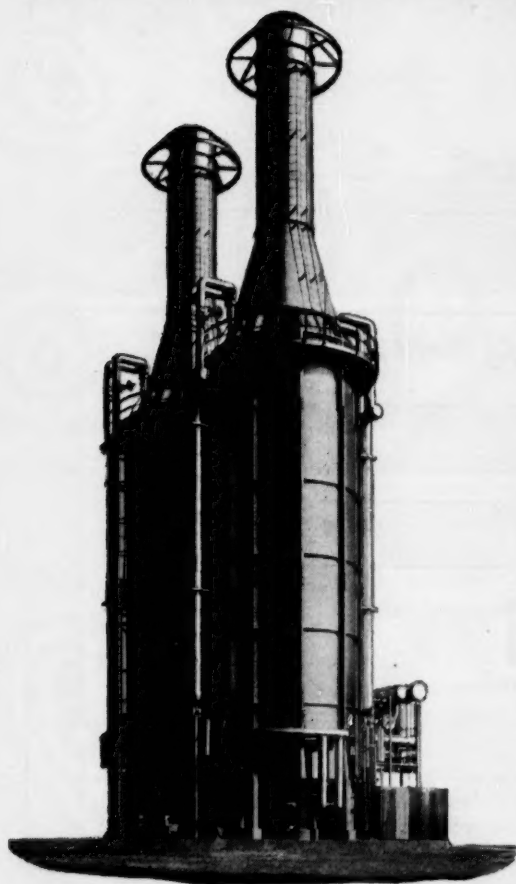
Louis Bay, to vice-president and director, The Dixon Chemical Co., Inc., Clifton, N.J.

G. S. Schaffel, to manager of research, Brea Chemicals, Inc., Los Angeles.

C. J. Chapman, to general sales manager, Industrial Products, National Carbon Co., New York City.

Robert A. Staniforth, to manager of chemical development, Development Dept., Inorganic Chemicals Div., Monsanto Chemical Co., St. Louis.

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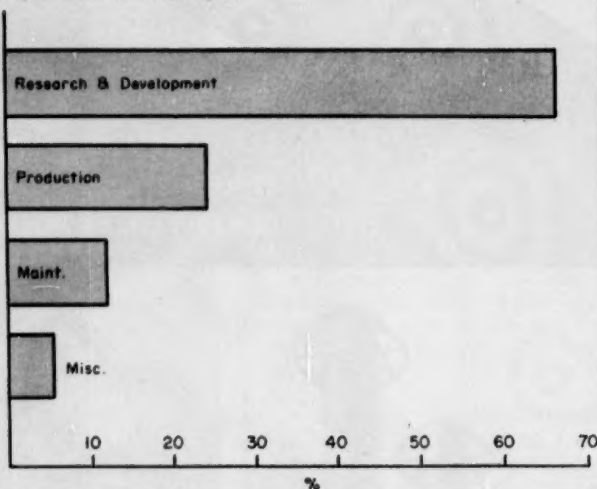
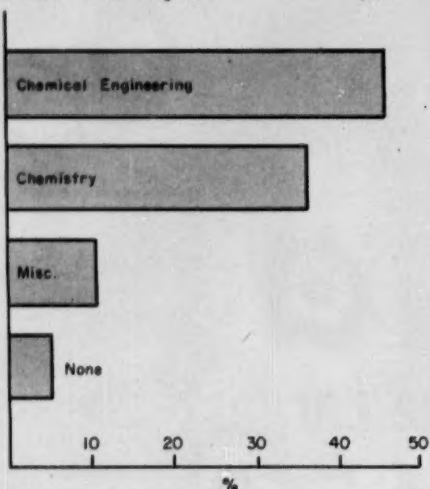
PRODUCTION

Corrosion Engineers

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plus

experience principally in:

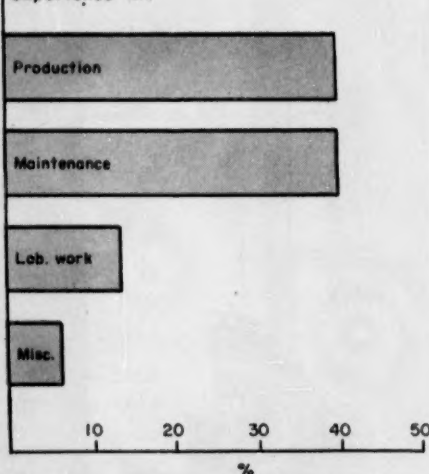
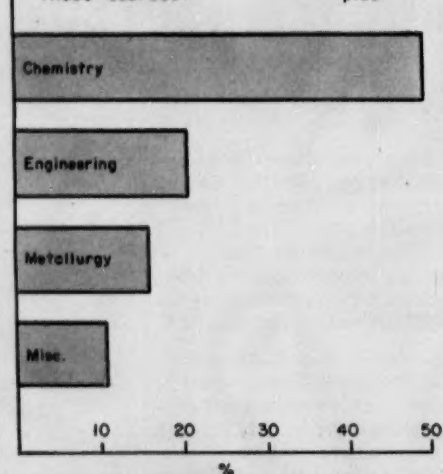


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these courses:

plus

experience in:



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rosion engineers spotlighted this week by a CW survey*.

In the roundup, CW queried members of the American Society of Corrosion Engineers who are affiliated with

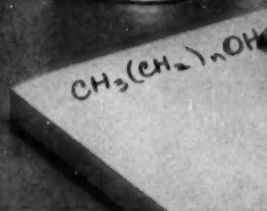
* For a view of the contributions and duties of a corrosion engineer by a leading authority in the field, see story on page 57.

chemical companies. Replies from salesmen and others engaged in selling corrosion-resistant products rather than designing or maintaining chemical plants were purposely screened out.

As far as titles are concerned, the

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Myristyl C ₁₄	28.0	24.0	4.0
Cetyl C ₁₆	2.0	11.0	34.0
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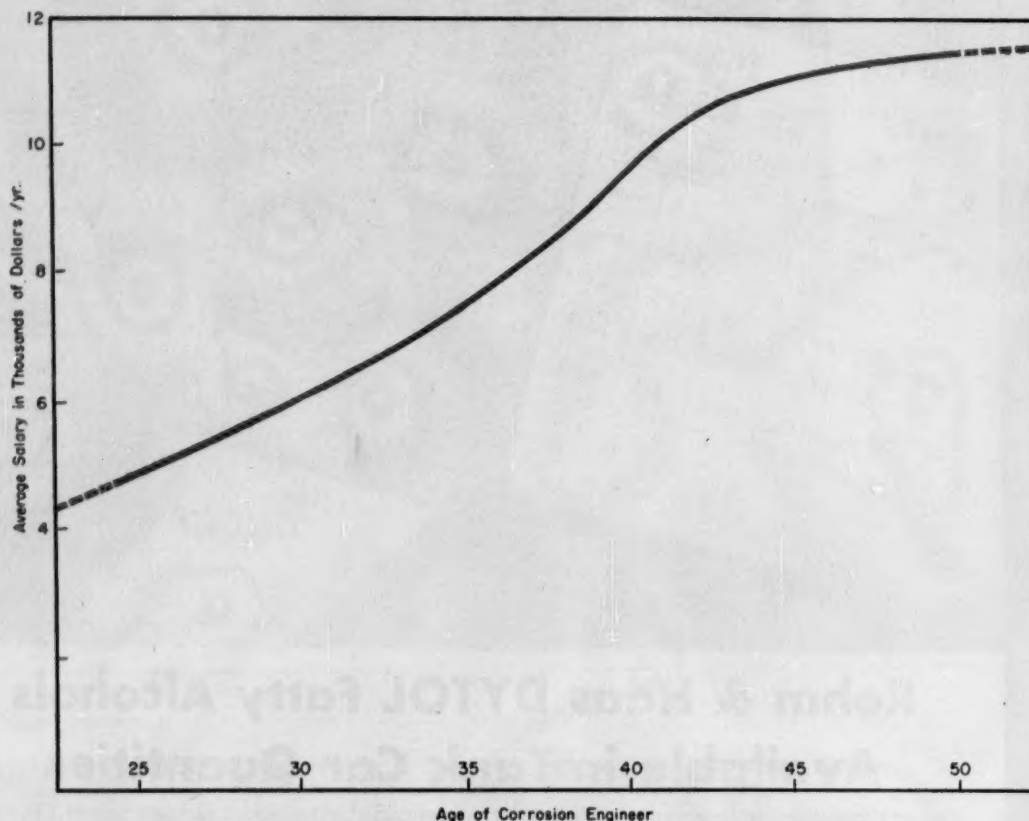
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CORROSION ENGINEERS' SALARIES



remainder are a heterogeneous group. Only a small percentage answer directly to the title of corrosion engineer or materials engineer. The others run the gamut from vice-president in charge of production to plant manager to processing or field engineer.

But as far as motivating force is concerned they're closely knit, homogeneous. Their guiding philosophy is to find the right material for the right job.

On the Average: About 15% of the men questioned fit a description of the "average" corrosion engineer. That would be a man between 35 and 40 years old who holds a bachelor's degree in chemistry or chemical engineering and makes about \$8,500/year. To attain his present status, he has spent about 13 or 14 years working in the chemical industry, most of which time was in research and development.

About 45% of the respondents fit the broader description of a man between 30 and 45 years of age who

makes between \$6,000 and \$12,000/year.

Although there are some extreme deviations from the average on salary, experience and age, there isn't too big a variation on education. Almost 46% have degrees in chemical engineering and another large portion (36%) in chemistry. About 12% have degrees in miscellaneous subjects.

Almost 30% of those with bachelor's degrees have advanced degrees as well, either masters or doctorates. All told, 64% have taken some courses since leaving school. The 6% who have no degrees compensate for it by having from 4 to 7 years more experience than others in the same age or salary groups.

Split by Age: Salary, of course, is dependent on a number of variables. There's a correlation, as you'd expect, between the corrosion engineer's age and salary (*see graph*). But surprisingly enough, there isn't much between his education and salary.

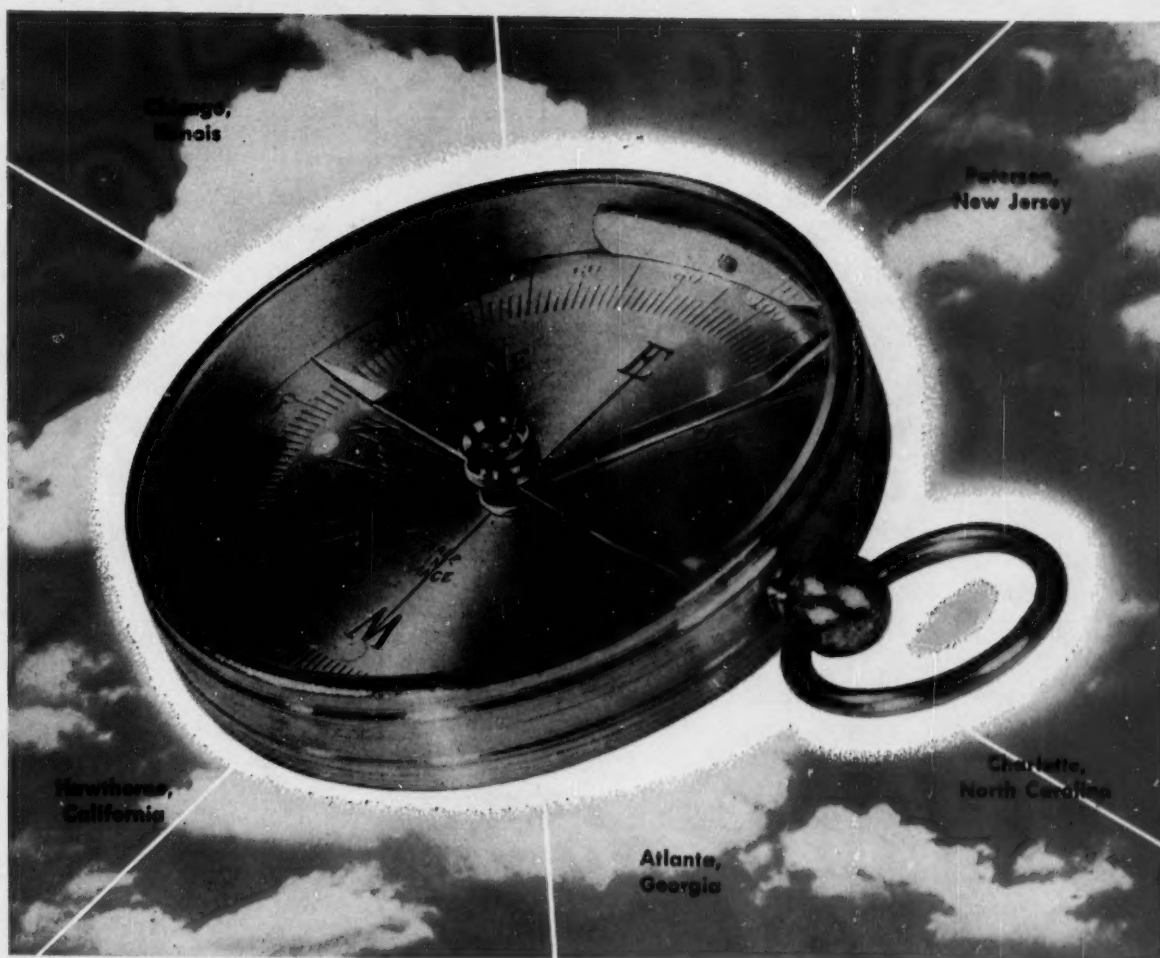
As the corrosion engineer's pay goes

up, there's also a sharp shift in his duties. There is, in fact, an obvious break at age of 35. For instance:

- Men under 35 spend only 16.2% of their time in administrative duties, but 25.8% of their time in testing. About 7.6% of their time goes into plant inspection; 6.4% into meetings and 3.9% into purchasing and related duties. The biggest portion of their time (40.1%) is spent in performing miscellaneous duties.

- Over 35, on the other hand, the corrosion engineer is apt to devote more time to administration, less to testing. This is how it breaks down in duties and percentage of their time spent on them: administration, 56.5%; testing, 12.9%; plant inspection, 8.2%; meetings, 11.8%; purchasing and related duties, 2.4%; miscellaneous, 8.2%

Getting Ahead: Despite the fact that more chemical engineers than chemists were questioned, the replies indicate the corrosion engineer places a premium on knowledge of straight



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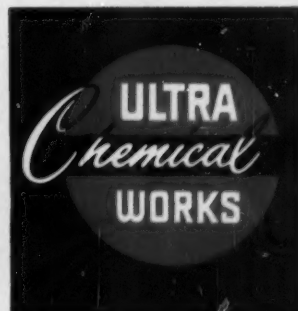
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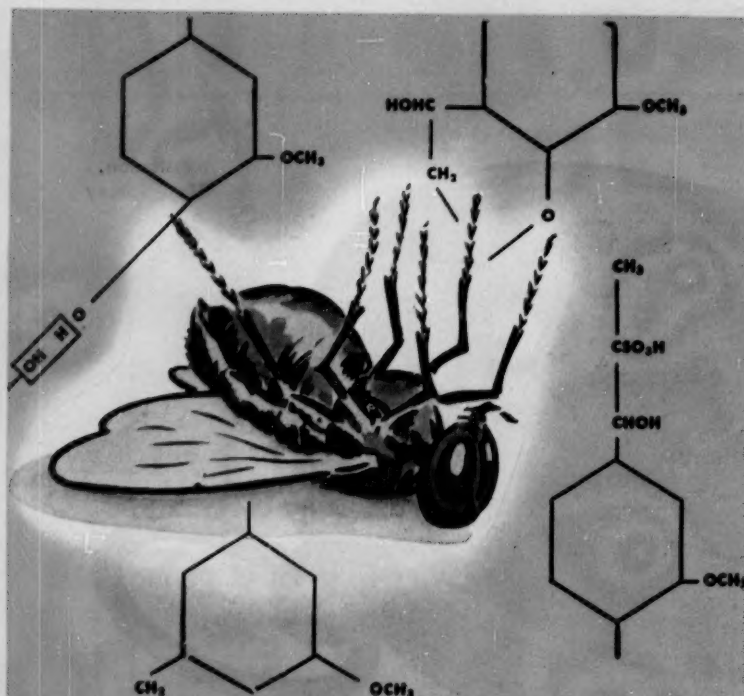
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PRODUCTION.

chemistry. When asked what sort of education was best for an aspiring young corrosion engineer, they mentioned chemistry almost twice as frequently as engineering. In third place in frequency of mention were courses in metallurgy.

Similarly, though most of the engineers listed research and development as their principal area of experience, they don't overlook the value of experience in production and maintenance. The two were tied in frequency of mention as the best experience for the aspiring corrosion engineer. The next most frequently mentioned was laboratory work.

Looking Ahead: On the whole, the corrosion engineer is content with his job, is well paid and is not eager to enter a new field. However, he sees his present job as a means to an end rather than as an end in itself. Realizing that the problems he encounters every day and the knowledge that he's amassing make him an asset to his company, he's setting his sights high.

When asked what sort of higher echelon position their present job equipped them for, almost half of the respondents said they were looking forward to a future as the top man in the company in research or development.

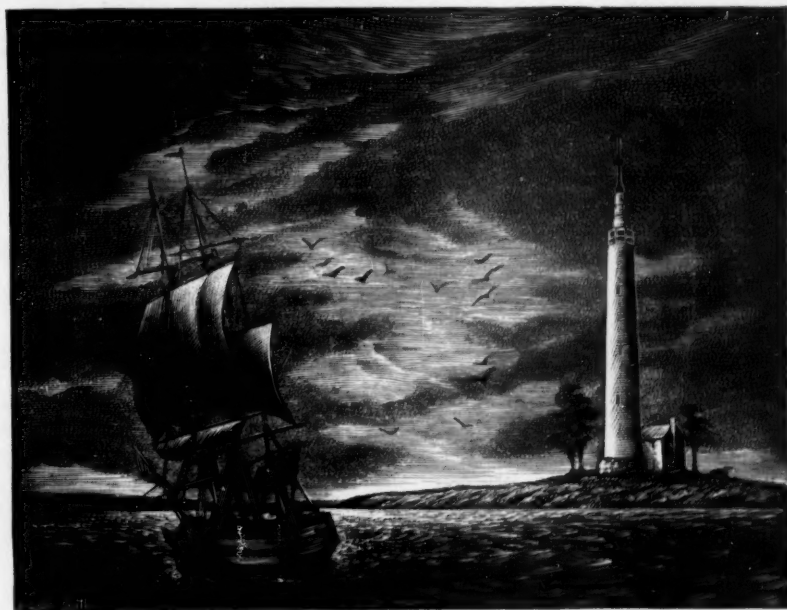
Approximately 14% felt they would like to go on to an executive position in sales or other function or to try their hands as consultants. The remaining 38% are about evenly split between top management positions in production or maintenance.

Many of the men queried have a "limited" future for the simple reason that they are already very close to being the top men in their companies. And none of them showed any inclination to underrate their present jobs.

When asked what specific contributions they had made to their companies, they pointed out that they have often saved the company appreciable sums on initial plant investments. Through their knowledge of what a given material can or can't do, they've anticipated some potentially crippling mistakes. Once the plant is in operation, of course, they can play a big role in cutting down both operating and maintenance costs. They can also help improve the quality of the product.

Their over-all contribution to the chemical industry is a lot more difficult to measure. It wouldn't be quite fair to say that corrosion engineers alone built the chemical industry. But they're key members of the team that did.

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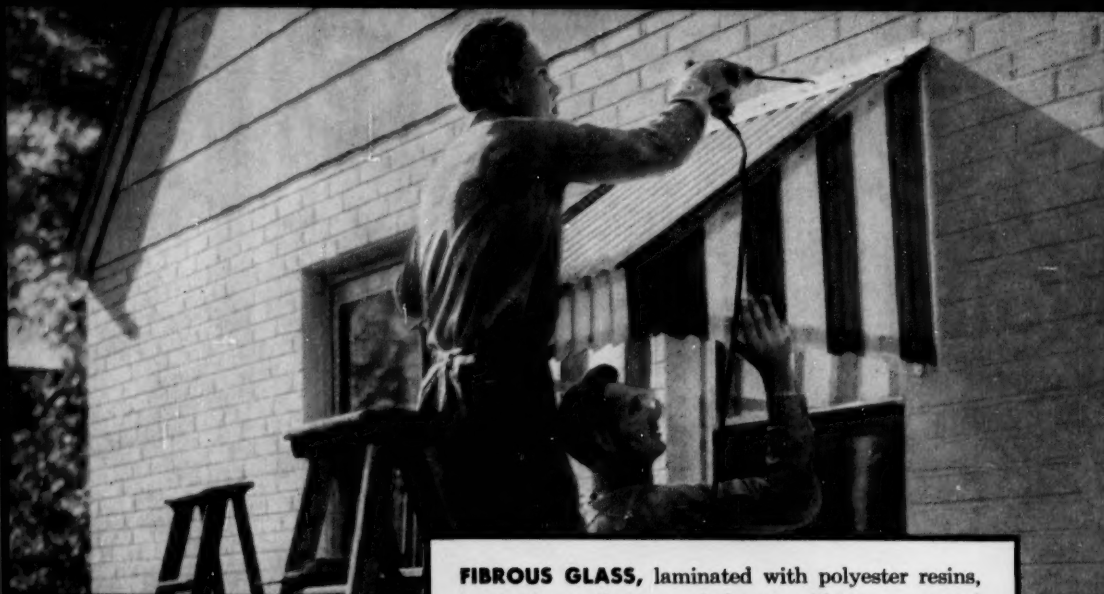
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CHEMICALS - PLASTICS

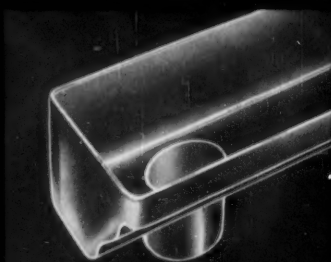
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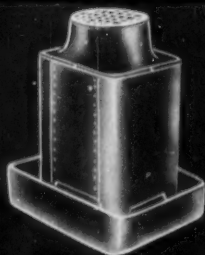
Reinforced plastics open new markets for new products



FIBROUS GLASS, laminated with polyester resins, is creating entirely new industries. Using corrugated sheet, for example, awning makers are developing large markets for translucent awnings. Lumber companies find ready sales for pre-cut "packaged" patios. Experienced custom molders now sub-contract for products or product parts that range from automobile bodies to lightweight bathtubs. Write Monsanto for names of resin suppliers and custom molders.



GUTTERING and downspouts—lightweight, non-rusting reinforced plastic—will soon be offered by alert manufacturers.



WATER-COOLING TOWERS for home air conditioning can be easily assembled with six reinforced plastic parts made from three simple molds.



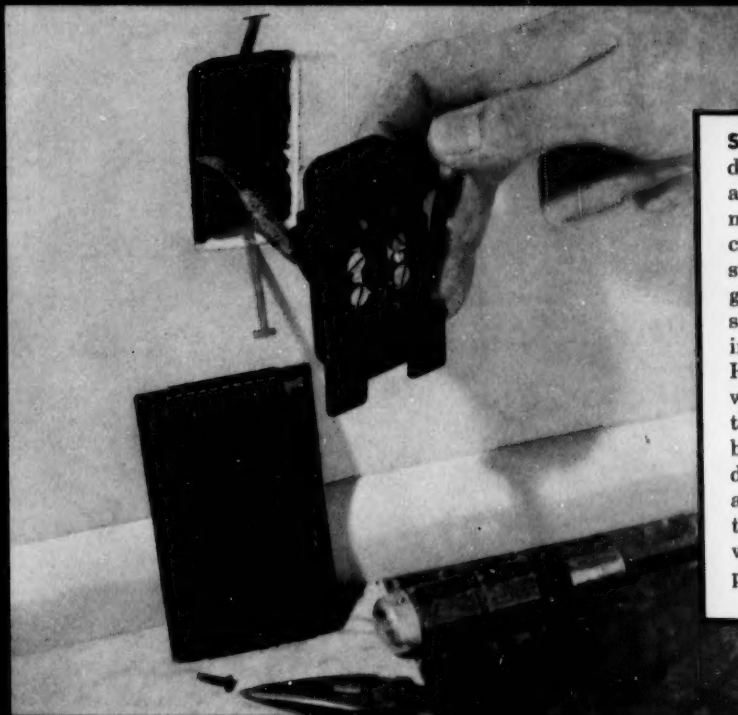
ONE-PIECE MOLDED TANKS of glass reinforced plastic are lightweight, rust proof, dent proof, heat resistant. Pressure tanks are available in shapes shown, in varying sizes and dimensions ranging up to 6 feet in diameter.

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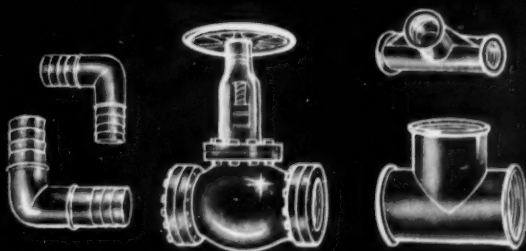


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CORROSION EXPERT LaQUE: To the subject, devoted student; to industry, teacher.

In Stride with Progress

Inexact as it may be, a \$6-billion/year price has been tagged onto the worldwide cost of corrosion. Impressive as it is, the figure has little significance

"There is no such thing as a general corrosion problem."

other than as an indicator of the vast scope of the subject. To a chemical and metallurgical engineer who has devoted more than a quarter of a century to combating corrosion, the true measure of corrosion control must be made in progress and not on a balance sheet. So said Frank L. LaQue in an interview with CW last week.

Past president of the National Assn. of Corrosion Engineers (*see preceding story*), LaQue currently serves as chairman of the American Society for Testing Materials' advisory committee on corrosion, and as a member of the National Research Council's corrosion advisory committee. He has authored numerous articles and delivered many talks on the subject, but is perhaps best known to the chemical process industry as director of the industrial corrosion forums (*CW, May 15, p. 52*) sponsored by International Nickel Co., Inc. Since 1945 corrosion engineering section chief of Inco's Development



and Research Div., LaQue was recently elected a vice-president and made manager of the D&R Div. But a large share of his time continues to

"Find a specific answer to a particular problem at the lowest possible cost."

center about his first love, corrosion control.

Measure for Measure: A comparatively new field of study, corrosion control has made long strides forward,

declares LaQue, but it is impossible to put a price tag on its value to the process industry. In a specific situation, of course, the cost of whatever an engineer recommends to cope with corrosion must be balanced against anticipated results. Says LaQue: "Given the required support and tools to work with, any good corrosion engineer should be able to effect savings of 10 times his salary. These savings—or increased profits—will stem from lowered manufacturing and maintenance costs, the resulting improved competitive position, and a better product."

But for purposes of a general evaluation, what can be charged against corrosion control costs and what can be credited?

From management's point of view, answers LaQue, results of corrosion control may be expected to show up in various forms:

- Preserving existing equipment, insuring maximum life of new equipment are two prime functions of the corrosion engineer.

- By slowing down corrosion activity, a control program reduces product contamination, improves product quality and indirectly affords the company a better competitive position. It also helps avoid costly downtime.

- Losses of valuable products—by leaks, for example—can be reduced or eliminated under proper corrosion control. Salvage of corroded equipment is another often profitable service performed by the corrosion engineer.

- Another important aspect of such a program is safety. Close control eliminates hazards such as explosions of corroded pressure vessels, cracking of corroded piping.

Pointless Comparison: But this is what management can expect from



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New Starch Indicator

To give one recent example, Glycerine's stabilizing action was a key factor in the development of a new starch solution for use as an indicator in iodimetry. In tests this Glycerine-stabilized solution gave the same results six months after mixing as it did when fresh.

Balance of Properties

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penetrant	antifreeze
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Booklets on the application of Glycerine in the drug and cosmetic and food fields are available. For your copy, write Glycerine Producers' Association, Dept. CW, 295 Madison Avenue, New York 17, N. Y.

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PRODUCTION



corrosion control, says LaQue, not what it can save. Some comparisons of cost and lifespans, of course, can be made; caustic evaporator tubes, for example, that once had a lifespan of only a year now last for 20 years as a result of alloy development. And, if all processes were the same now as they were 30 years ago, these figures and comparisons would have some validity. But usually, declares LaQue, new materials make possible equipment that otherwise would never have been built, and processes change as a result, sometimes drastically.

In fact, completely new fields often open up as a consequence of corrosion studies, and to LaQue that is both the beauty and the bounty of corrosion engineering.

Under the heading "Things That Never Might Have Been" were it not for corrosion and related studies, LaQue includes: fat-splitting autoclaves, petroleum cracking, nitric acid and synthetic glycerine plants; corrosion-resistant alloy digestors for both sulfite and kraft paper pulp; the synthetic

fiber, plastics, antibiotics, chlorine and chlorinated hydrocarbon industries; and most recently, nuclear power. In effect, the chemical process industry as it is today might never have existed but for such studies.

"The function of a corrosion engineer is primarily preventive, not curative."

Pointed Revue: Marked against any reference point, anticorrosion knowledge has come a long way in a relatively short time. Its progress, made in a series of small steady gains, is continuing, but has been seldom spectacular and is far from complete.

Significant, LaQue feels, is the slow acknowledgement by men in industry and schools of both the scope and the shortcomings of corrosion engineering. They have not made full use of its effectiveness nor have they effectively remedied its limitations.

The most pressing problem today is the shortage of corrosion engineers, and higher education is hard put to meet a growing demand with adequately trained men. More universities should inaugurate a corrosion engineering program, and more attention should be centered upon engineering curricula to better prepare all graduates to cope with corrosion problems in their respective engineering fields.

And after a corrosion engineer has left school to enter industry, he should be expected to keep operations from running into corrosion problems, not constantly correcting errors already made. Actually, this idea has advanced remarkably well; industry has learned quickly. Says LaQue: "When I first came to industry, I devoted 75% of my time to getting people out of trouble; lately, I have been spending 95% of my time keeping them out of trouble."

It is, of course, always better to catch a corrosion problem at the de-

"Any good corrosion engineer should save a company at least 10 times his salary."

sign level, before it reaches the operational stage. Firms that don't have their own corrosion personnel, LaQue suggests, could make use of their contractor's corrosion engineer when possible or call upon the equipment and



KELLOGG WAS HERE!



The economic highlights of Shell Chemical's new ammonia plant are impressive. Here's a brief summary:

- (1) Compressor savings of between 25 and 35%.
- (2) Production exceeding design guarantees.
- (3) Substantial reduction in cost of recovery and re-circulation facilities.

Engineering such as this interested National Distillers Products Corporation, too. And now a somewhat similar Kellogg-designed plant is going up at Tuscola, Ill., as part of its vast new petrochemical complex at this location.

The improved economics of the Kellogg ammonia process are further proof of the

Other Typical Kellogg Plant Contracts Are in the Fields of: alkylation • ammonium nitrate • ammonium sulfate • catalytic reforming • combination refining • ethylene • fluid catalytic cracking • glyceride purification • liquid fuels and chemicals synthesized from coal • methanol • nitric acid • phenol-from-cumene • phthalic anhydride • polyethylenes.

* One-hundred-and-fifty-ton per day anhydrous ammonia plant for Shell Chemical Corporation at Ventura, California.

contribution that advanced engineering can make today for tomorrow's better processes. Cooperating closely with Shell's own engineering staff, Kellogg engineers, not only designed an improved converter for the nitrogen-hydrogen reaction, but also devised a new, high-pressure reforming step that conserved the pressure at which natural gas is produced.

The plant is typical of the results of Kellogg's "Engineering for Tomorrow" which finds new ways to higher yields, bigger profits, less down-time.



For detailed information on Kellogg's ammonia process write: PROCESS ENGINEERING DEPT., The M. W. Kellogg Company, (a subsidiary of Pullman Incorporated), 225 Broadway, New York 7, New York.



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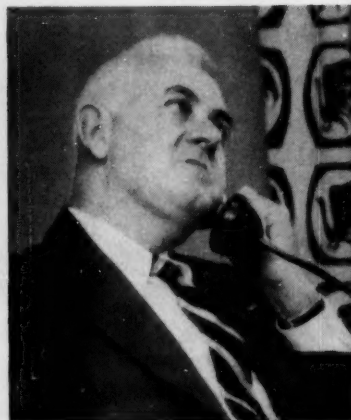
PRODUCTION . . .

suppliers' corrosion divisions.

Unfortunately, industry has been hesitant about discussing its problems with outsiders; only now is it losing its secretiveness and bringing its corrosion problems to those who can give help. And there is no reason, declares LaQue, why information gleaned from suppliers' case history files should not be brought to bear on many new problems.

He points out, however, that there is no such thing as a general corrosion problem. Each one occurs under a particular set of conditions, requires individual attention. In the chemical

"The place to study corrosion is in the plant, not in a laboratory."



industry especially, the place to study corrosion is in the plant; operating conditions can't always be reproduced in the laboratory. Tabled data and specification charts on corrosion characteristics are of little value in such instances; test samples must be placed in regular operating equipment. Like materials that show resistance to numerous chemicals, general solutions are of some aid. But they often miss the main objective. That, says LaQue, is to find a specific answer to a particular problem—at the lowest possible cost.

While corrosion offers nothing but negative facets from most viewpoints, time and money spent on study of it has been and continues to be one of the most profitable investments possible. And though knowledge gathered from such studies does not in itself generate progress, it does allow progress to move unhindered.

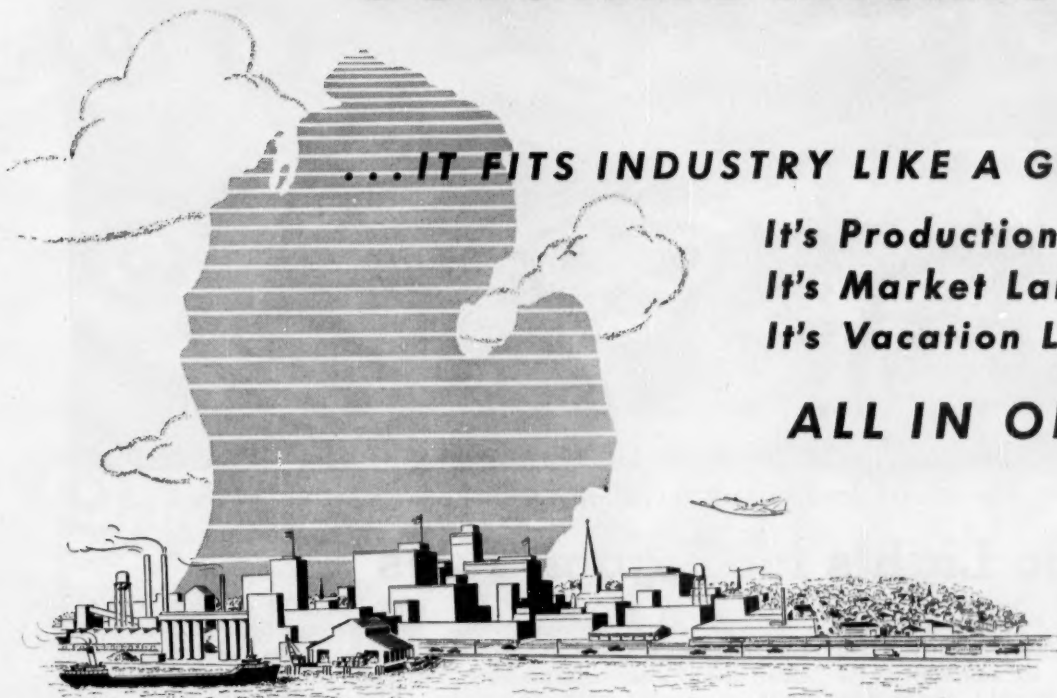
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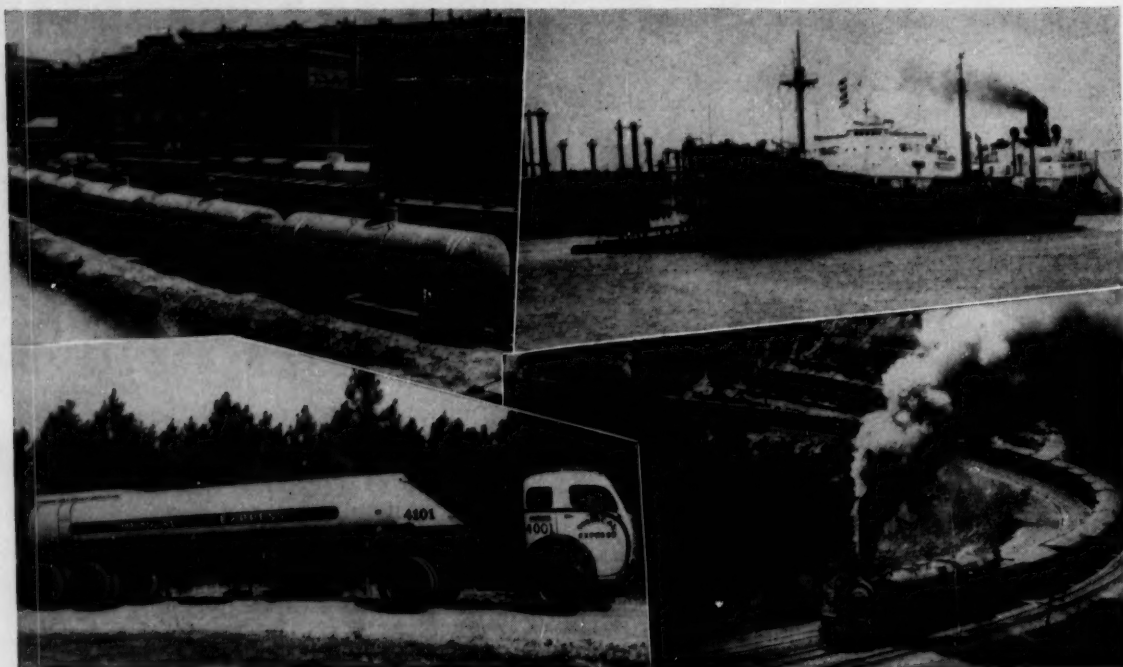


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DISTRIBUTION



TOOLS FOR STREAMLINING DISTRIBUTION: Hard pressed sales managers may find them handy.

Traffic Lights for Bigger Sales

In these days of stepped-up competition and flowing production, alert sales managers are especially on the watch for ways to add a "plus" to their services without raising costs. General managers, too, squeezed between narrowing profit margins, are happy to consider ways of cutting costs without jeopardizing customer goodwill. Canvassing chemical companies last week, CW learned they're finding their best friend is their traffic manager.

Astride one of the few remaining controllable cost elements, today's traffic manager may well be the harassed sales or general manager's best friend. As one leading chemical company executive views it: "Transportation costs represent between 10 and 15% of all costs. And there's a 10% controllable cost element in most large firms' transportation bills."

For example: One well-known chemical firm reveals that its cost of doing business breaks down like this:

Cost element	% of all costs
Labor	30.7
Materials & supplies	29.8
Transportation	11.5
Taxes	14.3

All others (including insurance administration, advertising and selling)	13.7
--	------

Another chemical concern, whose sales gross well over \$100 million, claims that by astute traffic maneuvering, it consistently brightens its annual profit picture with an additional \$1 million plus. How's it done? Through a "consolidation operation which combines all small shipments in order to take advantage of lower freight rate for bulk loads."

Obviously, from his position of wielding that big a financial stick, the traffic manager can be a powerful ally for the sales department.

From the standpoint of areas of contact, too, the traffic manager is well-positioned to strengthen the sales manager's hand. In fact, in a recent study of functions through which traffic, by the nature of its experience and position, could cooperate with other departments, at least ten traffic functions are reported geared directly to sales problems.

In order of frequency, the top ten ran this way:

- Assist customers in transportation problems.
- Furnish rate memoranda to salesmen.
- Furnish data on impending rate and classification changes.
- Furnish rates and other information for prospective customers.

tion for prospective customers.

- Inform sales on competitors' rates and rate requests.
- Supply information on warehouse location and related problems.
- Operate or advise on operation of distribution warehouses.
- Determine most desirable unit of sales on the basis of rates.
- Furnish rate information to aid in extension of market areas.
- Show most advantageous sales areas from traffic standpoint.

Customer Help: As an example of how one traffic manager helped satisfy a customer, take this case:

Isopropyl acetate had been moving in tank car quantities of 8,000 gal. via rail from producer in Chicago to customer at South Bend, Ind., at a rate of 44.85¢/100 lbs. Producer's traffic department was able to arrange with a tank truck operator to haul this material in 4,000-gal. tank trucks at 22.5¢/100 lbs. Result: because the distance from Chicago to South Bend is only 86 miles, the customer, by switching to tank truck service, was not only able to save 22.35¢/100 lbs., but also obtained faster delivery.

And in another case the traffic department, called in to apply its specialized knowhow to cement a cus-

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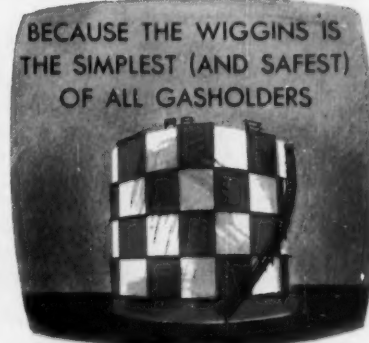
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August 21, 1954 • Chemical Week



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customer relationship, came up with this arrangement:

The company was moving NOIBN (not otherwise indexed by name) chemicals in drums, by box car, from Houston, Tex., to Newark. Moving via all-rail through St. Louis, the shipments were costing 220.8¢/100 lbs. When the traffic department was apprised of the movement, it managed to route the chemicals at a rate of only 158.7¢/100 lbs., a saving of 62.1¢/100 lbs. The trick? In this particular case, the traffic department, familiar with the fact that Seatrain Lines, Inc., maintained a line of joint rates on carload chemicals from Houston to Newark, arranged with Seatrain to handle the movement by steamship without transfer at the ports.

Self-Help: In other areas of help, too, traffic managers advised CW, their specialized training can keep costs down, achieve or maintain a competitive advantage for the sales department.

One traffic manager cited a recent case of negotiating a transit arrangement whereby costs on a highly competitive product were sharply pared.

This was his account:

"Our company, producing ethylene glycol near Houston, wanted to ship the bulk material to Chicago, store and eventually can it there. Plans called for finally reshipping a large portion of the product as proprietary antifreeze preparations to Boston. Without special arrangement, the total combination rate of such a movement would run 220.8¢/100 lb.

"However, when our department was informed of the proposed movement, we approached the railroads involved, negotiated a transit agreement. Under the resulting agreement, the railroads, in effect, protected the through rate all the way from Houston to Boston. At the same time, we were permitted to can, drum and store at Chicago, reship to Boston as needed.

"Result? We saved the company 33.35¢/100 lbs., strengthened our competitive position by that amount."

Frequently, in the course of canvassing chemical traffic men, the tender point of interdepartmental cooperation arose. Nub of the matter: advice from the traffic department is too seldom solicited.

However, one director of transportation recounted an example of how close cooperation between sales and transportation paid off handsomely:

"We were called upon to recommend, if possible, an improved ar-

range for moving the output of one of our units from the plant at riverside to storage adjacent to a customer's plant in a large industrial area.

"Because of our know-how, we are saving the company more than \$300,000 annually. In this particular instance, the most obvious route to move the goods was by rail. However, we discovered that barge transportation was not only cheaper, but also eliminated the considerable handling of the smaller shipments in tank cars."

Stepchild: Not all help that traffic can render sales is quite so spectacular, of course. But over the long haul, most traffic men feel that, given sufficient authority and freedom of choice, they can add many "plusses" to sales efforts.

Trouble is, according to traffic men, their department is too often re-

garded as a drudge service department. If regarded as merely an obedient, passive sales servant, it can scarcely be expected to originate plans that will effect sales savings, stimulate customer goodwill; in short, it can become, as one well-known traffic executive expressed it, "a vital factor in lowering production costs, increasing sales, widening markets."

Many traffic managers today feel that despite the aid they can render to sales and other departments, their roles are still little more than that of high-grade shipping clerks.

Often that is precisely what they are; the title of "traffic manager" is simply a misnomer. Says one rail executive: "There are still few traffic managers with any real status. They don't get executive pay. But then they don't perform an executive job."



Fertilizer Drive-In

IF YOU'RE SELLING a weighty product to the average consumer, you have to consider the customer's problem of carting it home. That's one of the major reasons why Phillips is now using its gasoline station system to sell ammonium sulfate fertilizer to the home lawn-and-garden owner.

Above, Phillips' executives, T. L. Cabbage (left) and A. M. Hughes, place on sale the first 25-lb. sack of fertilizer for gas station distribution. By vending through its gas dealers, the company reaches a

gardener who has transportation available for toting 25-, 50- or 100-lb. bags home.

Under the merchandising plan, moreover, Phillips skirts the need for establishing a special distribution network, gains the bonus benefit of numerous outlets. The dealer gains a profitable new item plus the possibility that fertilizer shoppers may purchase gas and other services. Inauguration of the new fertilizer marketplace follows a successful oil company precedent—station outlets for insecticides.



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protect emulsion-type
floor waxes against
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*Popular self-polishing formulations
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Titre °C	62 to 64
Acid Number	195 to 201
Iodine Value	3.0 Max.
Saponification Value	196 to 202
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TYPICAL COMPOSITION (Chain Length-Acids)

C ₁₆	10.0%
C ₁₈	90.0%
Unsaturated	3.2%
Saturated	96.8%

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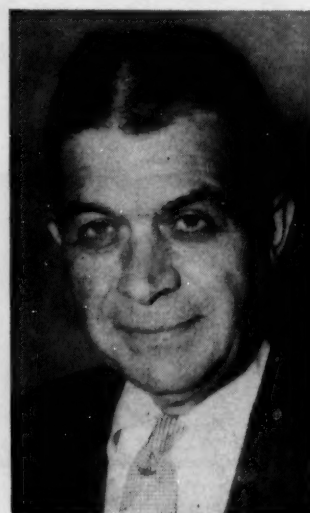
DISTRIBUTION . . .

Salaries for men of this caliber are correspondingly low. A survey taken a short time ago indicated that probably three-fourths of all traffic managers are paid \$10,000 or less.

New Day? Under present conditions, however, a trend toward upgrading the traffic job appears to be accelerating. Sales and top management, beset by competition, may well find that the improved services and cost-cutting potentials of traffic can give them a much-needed hand. And any company with a transportation bill of 10 to 15% or more might do well to beef up its traffic department with top talent, then give it a freer hand.

Ready for Reference: Blueprint for an Effective Marketing Program—recommendations on the establishing and organizing a marketing program and regulating the workload of a sales manager. Marketing Series No. 91, 31 pp., \$1, American Management Assn., New York.

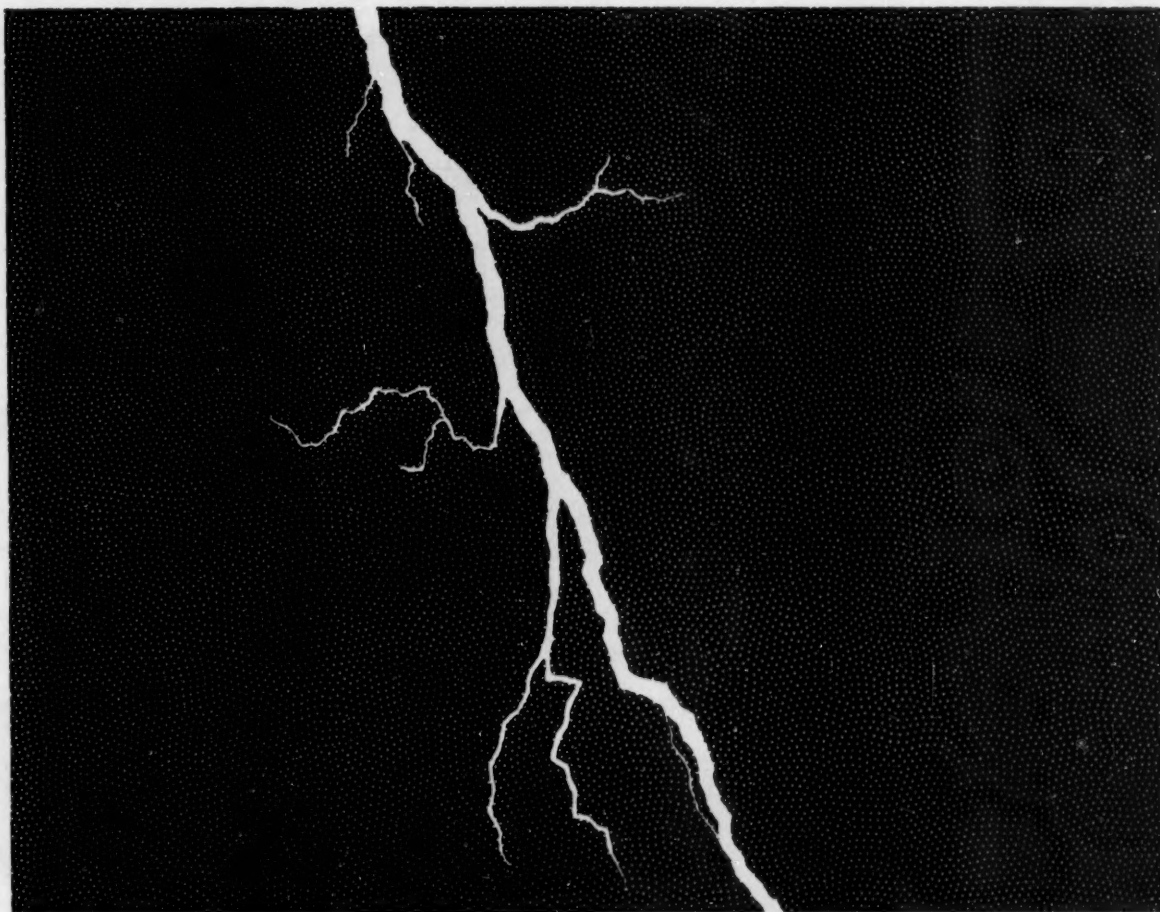
• **Twenty Ways to More Efficient Purchasing**—a leaflet outlining time-saving suggestions for the purchasing agent. National Sales Executives, Inc., New York.



WIDE WORLD

Seaway Boss

NOW ON THE RIVER to reality, the St. Lawrence Seaway (see CW, May 22, p. 74) obtained its first director recently when President Eisenhower named Lewis Castle, a Minnesota banker, to the spot. Sought for over 40 years, the seaway will link the Atlantic with Great Lakes ports.



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SERVICE WEAVES SALES: Sales Manager S. Y. Stribling III and chemist V. C. Smith examine print in Hilton-Davis' new dyestuff distribution center.



AIR-CONDITIONED VAULT: Key point in new setup, refrigeration protects heat-sensitive salts from deterioration.

Dyes for Dixie

Clustering over cocktails, finishers from the Southland's fast-spinning, ever-growing textile trade will gather this week to inspect Hilton-Davis' gleamy new combined sales, service, and dye distribution center in Greenville, S. C. And, after touring the 7,000-sq. ft. structure, the 100-150

guests will settle down to a buffet dinner and watch a color movie to be presented by H-D's sales vice-president and part-time explorer, Nelson Knaggs.

This splashy formal opening is the method Hilton-Davis, a division of Sterling Drug, has chosen to kick off

its campaign to snare a larger share of the Southern dyestuff market. Just what it's aiming at, the company won't disclose, but if the new center is any indication, the target is high.

Successful selling to the textile industry involves extensive service. Virtually all who cater to the trade provide laboratories to match colors, measure color stability, and perform other tests. Consistent with this, Hilton-Davis is building its drive for Dixie dye sales upon a sturdy foundation of service and tech-service salesmen.

How will the new center aid H-D's Southern sales push? The new base of operations, avers Knaggs, will provide these services essential to dyestuff sales:

- Laboratory testing. Color matching, a big problem to finishers, can now be tackled at Greenville. Other test equipment includes that for washing, color padding, printing, color crocking (rub-off), fading, and acid aging. Mixing machinery—for dye formulations that deteriorate if compounded too long before use—is also part of the outfitting. Knaggs estimates that close to 100% of all service requests can be handled at the center. Only for new dye syntheses will referral to the main labs in Cincinnati be necessary.

- Rapid delivery. Situated at the very crossroads of the South's fabric land, the center can fill most orders overnight, many within a few hours of receipt. And, the choice site will also speed up the processing of service requests.

- Ample inventory. Some 3,000 sq. ft. of space store nontemperature-sensitive products, and an equal area is split between an air-conditioned vault and service labs. The air-conditioned chamber, claims H-D, permits "mint-fresh" delivery condition for its heat-sensitive fast-color salts. All told, over 1,500,000 lbs. of dyestuffs can be warehoused in the structure. This allows maintenance of stock sufficient to meet customer demands quickly.

The other hinge on Hilton-Davis' door to Southern dyestuff sales is its staff: two graduate chemists, four tech-service salesmen, and its director, S. Y. Stribling III. Acquisition of the selling staff—in a hurry—was one of the problems created by the firm's abrupt switch from agent-distribution a few months ago.

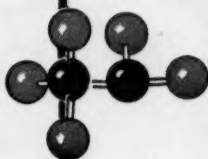
Using an old but effective principle, the company tapped its competitors, selected men with the plus qualification of previous area experience. Hence, the company avoided the awkward period involved in such changeovers during which new men



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1 MONOMETHYLAMINE CH_3NH_2



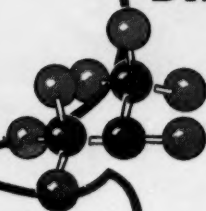
Uses

Manufacture of amide and sulfonated amide-type detergents and surfactants. Synthesis of caffeine, aminophylline and desoxyephedrine. Manufacture of photographic chemicals, the explosive tetryl, amide-type plasticizers, ion-exchange resins, corrosion inhibitors and paint removers.

Properties

Molecular Weight	31.06
Boiling Point at 760mm, °C	- 6.79
Flash Point, Tag Open Cup, °F	34 (30% sol)
Density at 20°C	0.912 (30% sol)
Weight per U.S. Gallon at 68°F, lbs.	7.6 (30% sol)

2 DIMETHYLAMINE $(\text{CH}_3)_2\text{NH}$



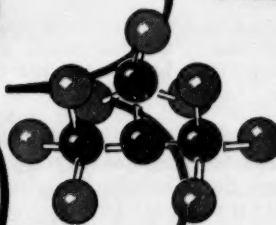
Uses

Raw material in manufacture of thiuram sulfide-type vulcanization accelerators and of dimethyldithiocarbamic acid salts used as fungicides. Neutralizing and solubilizing agent in preparation of concentrated solutions of 2,4-D salts. Manufacture of anti-malarials.

Properties

Molecular Weight	45.08
Boiling Point at 760mm, °C	6.88
Flash Point, Tag Open Cup, °F	54 (25% sol)
Density at 20°C	0.921 (25% sol)
Weight per U.S. Gallon at 68°F, lbs.	7.7 (25% sol)

3 TRIMETHYLAMINE $(\text{CH}_3)_3\text{N}$



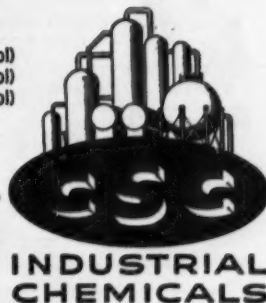
Uses

Preparation of long-chain quaternary ammonium compounds used as softeners, lubricants and waterproofing agents for textiles. Used with benzoyl peroxide to "set" methacrylate resins. Synthesis of cationic surface-active agents.

Properties

Molecular Weight	59.11
Boiling Point at 760mm, °C	2.87
Flash Point, Tag Open Cup, °F	38 (25% sol)
Density at 20°C	0.913 (25% sol)
Weight per U.S. Gallon at 68°F, lbs.	7.6 (25% sol)

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REACTIONS

With **paraformaldehyde**, it yields methylolpyrroles, of possible use as cross-linking agents.

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REACTIONS

Oxidation with chromic acid gives gamma-amino butyric acid.

Addition of carbon monoxide in the presence of a nickel or cobalt catalyst produces N-formyl pyrrolidine.

Condensation with phenol and formaldehyde yields 2, 4, 6-tri-(N-pyrrolidylmethyl)-phenol.

Acylation with methyl formate produces N-formyl pyrrolidine.

Alkylation with a hydroxy compound such as 1-butanol gives the N-substituted alkyl derivative of pyrrolidine.

Addition of alkylene oxides gives alkanolamines of the type of N-(2-hydroxyethyl)-pyrrolidine.

GET MORE INFORMATION about these useful intermediates by clipping and mailing coupon below.



BETTER THINGS FOR BETTER LIVING
... THROUGH CHEMISTRY

E. I. du Pont de Nemours & Co. (Inc.)
Electrochemicals Department CW-3
Wilmington 98, Delaware

Please send me more information
and literature on:

☐ Pyrrole ☐ Pyrrolidine

Name

Firm

Address

City State

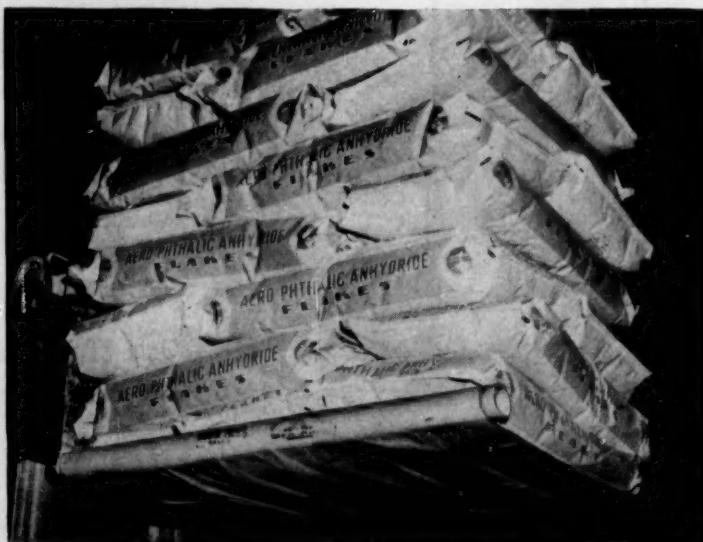
DISTRIBUTION

establish contacts, dig for accounts.

Bigger Budget: To help its salesmen sell its wares, H-D has scaled ad budgets upwards, mapped additional sales plans. Just what the "other" plans are, the company won't divulge.

Scarcely before the din from its Greenville opening simmers down, H-D will do it all over again a week

later in Providence, R.I. Unlike the Southern operation, a new venture, the Rhode Island opening represents only a transfer from Boston to a point closer to the thick of remaining New England textile industry. But the elegant send-off, the wine, dine, make friends, and show-em-you-can-serve technique will be the same.



Paperweight Heavyweight

SCALING A MERE 3 lbs., American Cyanamid's new paper pallet, "Accopak," can nevertheless hold a hefty load. Above, some 1,920 lbs. in two dozen 80-lb. sacks snuggle on the sling between the forks of a lift truck.

Developed by the firm's materials handling engineers for shipping phthalic anhydride, the pallet derives its strength from a melamine resin treatment. The paperweight heavyweight, claim company officials, proffers these benefits over conventional wooden pallets:

- **Weight.** Usual pallets made from wood weigh 75-100 lbs., Accopak about three. In shipment, this can amount to a weight saving of almost a ton per freight car, corresponding freight savings.

- **Cost.** Cyanamid estimates that the paper sling may be produced to sell for under 25¢, possibly for as little as 10¢. The price of wooden supports runs about \$4. And although an ordinary pallet can be reused extensively, shipping costs

must be paid for its return transport. Besides, the most costly part of the paper pallet—the cardboard tubes—may also be reused.

- **Space.** Consisting of but two cardboard tubes and a paper sling, the pallet requires little space, can be stored flat or rolled up. By use of the pallets, freight car capacity for phthalic was upped 40%. This resulted from the elimination of wooden pallets, and because double-decking with the paper sling is possible.

The sling is formed when the cardboard tubes are inserted in the ends of the stiff paper base. In use, fork trucks are equipped with bayonet forks that slip into the tubes for hoisting. And, during storage or shipment, the sling remains with the load.

Cyanamid is confident that the novel pallet will be a boon to materials handling, plans soon to make it available to industry. Currently, the company is offering paper producers licenses for its manufacture.



Oklahoma serves the Southwest, the nation's fastest growing market area.

Within a 500 mile radius of Central Oklahoma, there reside 37,822,000 people who receive annual income payments of more than \$53,000,000,000. These people spend \$38,500,000,000 in retail sales and have bank deposits in excess of \$36,000,000,000. Oklahoma is ready to serve you in this fabulous market.

Oklahoma labor has proven to be productive and easily trained in many diversified skills in developing industry that recently located in our State. Pride and stability in the individual worker is reflected in the negligible amount of man-days lost through work stoppage or labor disputes, thus a reduction in cost of operation and increase of marketable output.

OKLAHOMA Men



OKLAHOMA Materials



Oklahoma's natural resources and raw materials are viewed by industry in terms of new plants and plant expansion. Economical natural gas, refinery gases, liquified petroleum gas, fuel oil, limestone, coal, water and agricultural products are all available in large quantities to meet present and future needs of industry.

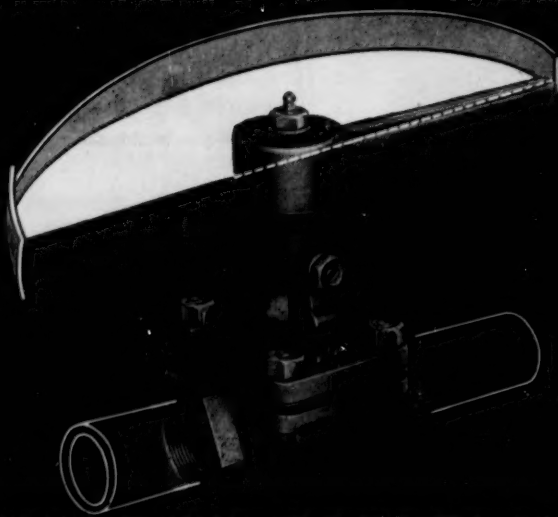
Many other facets of Oklahoma's industrial picture bear investigation. Economical power in large quantities throughout the State, an extensive network of air, rail, truck and motor bus transportation; a tax structure beneficial and profitable to industry and numerous industrial sites serviced by utilities, highways and railroads to complete your industrial picture. Look into Oklahoma and then decide that your future is in Oklahoma.

We know that your business has its individual requisites and demands. Therefore, to answer specific questions as they pertain to your industry, write in confidence outlining your needs and requirements. A factual report will be submitted for your consideration.



with this corrosion resistant valve . . .

**YOU GO FROM FULL OPEN
TO FULL CLOSED IN A
180° SWING OF THE LEVER**



HILLS-McCANNA

Quick Opening

SAUNDERS PATENT DIAPHRAGM VALVES

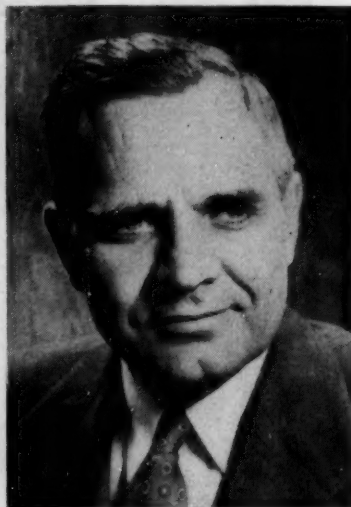
Where you must combine the ability to handle tough services with quick opening—quick closing characteristics, Hills-McCanna Lever operated Diaphragm Valves are the answer. The lever action is smooth and positive. An adjustment for holding the handle in an intermediate position provides throttling when required. Available with choice of fifteen diaphragm materials including rubber, neoprene, polyethylene, Kel-F and Teflon. Choice of over fifty body materials that include rubber, glass, lead, and plastic linings, any machinable alloy and plastics. Dependent upon materials and size, Hills-McCanna Saunders Patent Valves are suitable for temperatures to 400°F., pressures to 150 psi. Write for descriptive literature. HILLS-McCANNA CO., 2445 W. Nelson St., Chicago 18, Illinois.

HILLS-McCANNA

saunders patent diaphragm valves

**Also Manufacturers of Proportioning Pumps
Force Feed Lubricators • Magnesium Alloy Sand Castings**

DISTRIBUTION . . .



DUNCAN: His unique setup is geared to move new production.

Acrylo Sales Team

This week, one of the top chemical companies un-limbered its guns in a new sales drive. Disclosing the formation of a new petrochemical department sales group, Lyman Duncan, general manager, American Cyanamid's Organic Chemicals Div., discussed his company's blueprint for the products of its new Fortier Plant.

According to Duncan, the new group, headed by department manager V. E. Wellman, will concentrate its efforts on marketing acrylonitrile. Included in initial moves are four new appointments, two new sales offices:

- J. C. Pullman, named manager of the department's technical services, will supervise technical matters.
- A. J. "Jim" Weith, as assistant sales manager, will be responsible for sales and sales development.
- George Voss, as New York district sales manager, will cover southern New York, New Jersey, eastern Pennsylvania and Maryland.
- Frank Miner, Chicago district manager, will be responsible for sales in Minnesota, Michigan, Illinois, Indiana and Wisconsin.

Emphasizing the importance to his company of the current move, Duncan cited these particular features:

- It marks the first time in recent chemical history that a company has established a sales department to promote a single basic chemical.
- All personnel selected to head the drive are unusually well-qualified in terms of long technical experience.

Declaring that the present group is only the nucleus of the effort, Duncan said: "Other sales offices will be established as the need develops."

Full Range of Fatty Acids for Coatings ☆☆☆☆ Liquid Amines Now Available ☆☆☆☆ Resins Improve Fire-Retardant Paints

Coating Vehicle Manufacturers—undoubtedly you want for your products the correct raw materials at the best price. Initial color—color stability—drying characteristics, and other essential film requirements must be met to enable you to expand your market. That's why General Mills makes available a complete range of uniform fatty acids of various properties at economical prices (see chart).

General Mills Aliphats make excellent air drying and baking alkyds.



"... Jack jumped over the candlestick"—and he didn't hurt the table a bit, for it's coated with a hard-finish, color-stable varnish made with General Mills fatty acids.

They feature a full selection of acids derived from soybeans, cottonseed, and tall oil.

For more information on fatty acids, please mail the coupon below.

☆☆☆☆

Four New Fatty Amines, easily handled in liquid form, are now commercially available in drum or tank-car lots from General Mills.

Known as Alamines 34 and 34-D, technical and distilled grades primary soy amines, and Alamines 21 and 21-D, technical and distilled grades primary coco amines, these amines are reactive intermediates for fatty quaternary ammonium compounds and other derivatives.

They yield cationic surface-active agents, potent germicides, sudsing additives for synthetic deter-

ALIPHATS (fatty acids)	COMPOSITION	PROPERTIES	RECOMMENDED APPLICATIONS
16-A	Highly refined oleic and linoleic acids	Top color retention; rapid drying; absence of linolenic acid	Premium quality white and pastel industrial finishes
16-B	Fractionally distilled fatty acids	Good color retention; economy	Special alkyds; auto finishes; exterior paints
16-BW	Highly refined oleic and linoleic acids	Good color; color retention; fast drying; economy	First class general purpose alkyds
17-A	Refined soybean type fatty acids	Excellent color; color retention; hardness	Very fast drying top quality finishes
32-A	Distilled soybean type fatty acids	Good color; economy	Colored paints & enamels
34-B	Fractionally distilled soybean type acids	Excellent air dry; good color retention; hard, tough films	Premium quality air drying industrial and trade sales finishes
44-A	Fractionally distilled tall oil fatty acids	Non-yellowing low rosin content	Very economical replacement for soybean fatty acids
44-B	Fractionally distilled tall oil fatty acids	Economy; good color; medium rosin content	General purpose alkyds where some rosin is acceptable

The table above shows some of the properties and recommended applications of eight General Mills Aliphats (fatty acids) designed for use in alkyd resins and other coating vehicles.

gents, textile chemicals, and water soluble salts for wetting action and detergency in acid solutions.

The new amines are insoluble in water, but highly soluble in many organic solvents. If you prefer water soluble amines, corresponding amine acetates (Alamacs) are also available from General Mills.

For more information on General Mills Alamines, mail coupon below.

☆☆☆☆

Interesting New Uses for General Mills Polyamide Resins continue to develop.

Most recent is the improvement of fire retardant paints by using GMI Polyamide Resins 93 and 94. Experiments with Polyamide Resins and various oils show promising results. These Polyamide Resins aid the effectiveness of fire retardant paints by increasing intumescence, protecting the substrate while helping to smother the fire.

Data on the general properties of Polyamide Resins 93 and 94 can be obtained by mailing the coupon below.

PROGRESS THRU RESEARCH

☆☆☆☆ General Mills CHEMICAL DIVISION KANKAKEE, ILLINOIS

Please send me technical information for the products checked below.

Fatty acids: ☐ 16-A ☐ 16-B ☐ 16-BW ☐ 17-A ☐ 32-A ☐ 34-B ☐ 44-A ☐ 44-B

Fatty amines: ☐ 21 ☐ 21-D ☐ 34 ☐ 34-D

☐ Polyamide Resins: I am interested in using it for _____

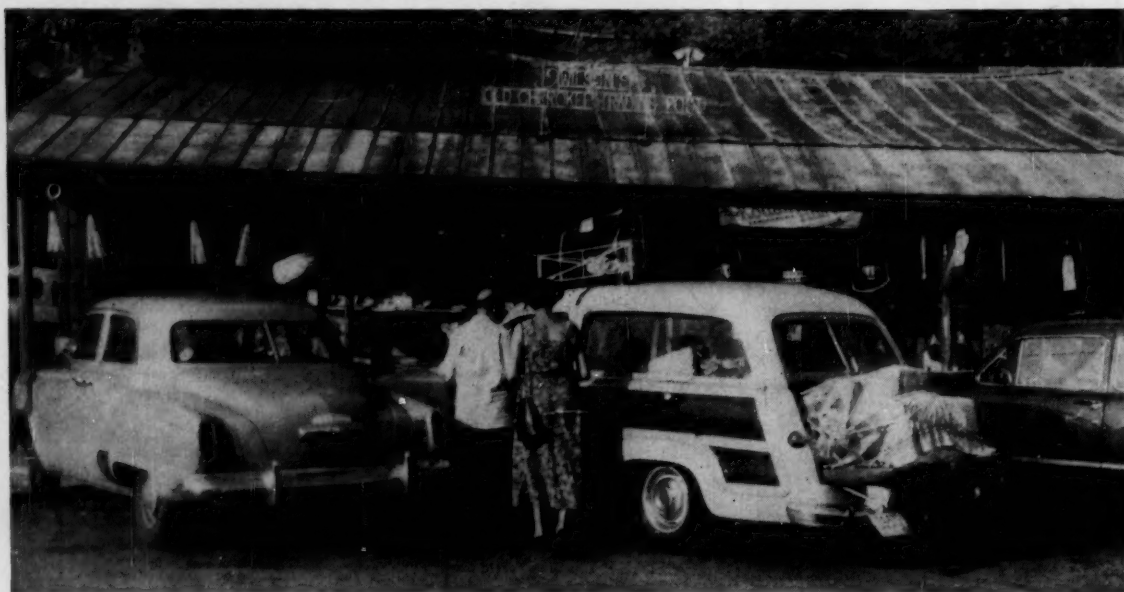
Name _____ Dept. _____

Firm _____

Address _____

City _____ State _____

SEND THIS COUPON:



VACATION TRAVELERS: The vacationing family's an enthusiastic specialties buyer.

Happy Holidays for Specialties

The big, full-page ad last week by a Chicago department store on cosmetics "to make summer seem cooler" could be duplicated in nearly every town across the nation—if not on cosmetics, then on summertime medicines. And the tune of the ad pages was mirrored in the editorial sections, too, with beauty and health columns stressing poison ivy treatments and sunburn easers.

For now, it's the vacation period, the beach season, the camping out time. It's the top time for selling summer specialties—fly-repellents, suntan lotions, motion-sickness potions, et al.

Just how big the market for these products is can be gleaned from a study made by Curtis Publishing Co. on vacation travelers in the U.S.* That study indicates that (in the 1952-53 season, at least) more than 5 million families in this country went on vacation jaunts—and of them, nearly 26% bought cosmetics and toiletries for their trip and spent an average of \$4.34 on them. This year, all indications are that vacationing is above last year's.

These figures, of course, don't include the expenditures for medicines and drugs that get extra-heavy play during the summer—the poison ivy

remedies, athlete's foot medications, and burn soothers. But in many cases, the dividing line between cosmetics and pharmaceuticals is hard to draw.

Glow of Health: Because you just can't call it a summer unless you boast a tan, suntan preparations have become major specialties. Women seem to be the principal purchasers of such products, and surveys of consumer habits by women's magazines† indicate that an average of about 20% of the nation's women buy the products, with younger women favoring them.

A recent study by *Drug Topics* magazine includes this estimate of the retail sales volume of suntan oils: \$6.69 million in 1953, compared with \$5.9 million in '52, \$4.75 million in '51.

Sales of the various suntan preparations varies considerably with area promotion. A big West Coast seller, for example, is Rolley's Sea and Ski (which has moved east with considerable success this year); Squibb's Sun and Surf is a heavily promoted East Coast product. Among the top products volumewise across the nation are Artra Cosmetic's Sutra, Douglas Laboratories' Coppertone, and J. B. Williams' Skol. Nearly all the big cosmetic houses have products with substantial sales, too.

One of the latest ideas in suntan oils is the use of silicones (CW, July 17, p. 52). The promotional emphasis: they don't wash off when the user swims. (They are typified by Lenthier's Nu-Tan and Shulton's Bronz-tan.)

Many of the preparations do a multiple duty now—soften the skin, provide antiseptic action, as well as reduce sunburn hazard. Possibly, there are other chores they might take on, such as deodorizing and repelling insects. In many cases, these new developments are the work of the small formulator, rather than the bigger cosmetic houses.

Summertime Slant: Many cosmetics, of course, simply exploit a summer angle in their promotion: burning sun-rays and scorching winds are substituted in ad copy for winter's stinging blasts and rugged temperatures.

Colognes, for example, are pushed now for their light fragrances and cooling effects. Hair lacquers are touted for their ability to tame wind-tossed hair. Lipsticks with lanolin are emphasized because they prevent sun-parched lips.

On the other hand, foot lotions, like Bounce, Inc.'s (Dayton) Bounce, Foot Frost Inc.'s (Chicago) Foot Frost Cream and Lotion and the brand new Foley's Foot Care, made by Foley &

* The Travel Market of the United States, made by the research department of the Curtis Publishing Co.

† *Seventeen*, *Cosmopolitan*, *Women's Home Companion*, for example, have made such studies.

Made in Carbon for High Purity

85% H_3PO_4

THE SUPERLATIVE PURITY of V-C 85% N.F. Grade Phosphoric Acid is the planned result of a series of V-C processes utilizing the most modern facilities under rigid controls.

Elemental phosphorus, produced in advanced-type electric furnaces, is oxidized into phosphorus pentoxide and then hydrated with purified water in *fully-carboned* equipment. Impurities are removed with meticulous care and the resulting product is an odorless, water-white, sparkling-clear, syrupy phosphoric acid which surpasses National Formulary and American Chemical Society specifications and meets U. S. Food and Drug Administration regulations.

Because of its exceptional purity, V-C 85% N.F. Grade Phosphoric Acid grows ADP crystals without distortion. It is the only acid selected and used exclusively for this purpose by the world's largest manufacturer of synthetic piezo-electric crystals.

Virginia-Carolina Chemical Corporation produces a complete line of phosphoric acids, including 85% N.F. Grade, 80% and 75% Food Grades, and 62½% "wet-process" Commercial Grade. These acids are shipped in glass carboys, stainless steel drums, rubber-lined tank trucks and tank cars, with 48-hour tank truck delivery in Middle Atlantic and Southeastern states.

Basic in Phosphorus

THE BASIC POSITION of Virginia-Carolina Chemical Corporation in phosphorus and its growing family of useful compounds is the result of nearly a century of progressive pioneering, including this country's first mining of phosphate rock in 1868 and first commercial production of phosphoric acid in 1907.

The greatest V-C growth in phosphorus has occurred in recent years. V-C phosphate mining activities have been vigorously expanded and thoroughly mechanized. New V-C furnaces for producing elemental phosphorus are the most modern now in operation.

V-C has five phosphoric acid plants and is the only manufacturer of phosphoric acids both by the

"wet process" and by phosphorus conversion. Other V-C facilities yield phosphoric anhydride, sodium orthophosphates and sodium polyphosphates, phosphatic specialties, and sodium metasilicate.

A V-C organophosphorus plant is in large scale production of alkyl phosphites, phosphonates, phosphorothioates, and other new organics. A semi-works unit is pioneering with new and highly promising chemical groupings based on phosphorus.

Enterprising research and progressive development are V-C traditions, constantly improving present products and processes, creating new products for new uses, opening new frontiers for chemical progress.

V-C Chemicals

Phosphorus, Elemental
Phosphoric Acids
Phosphoric Anhydride
Disodium Phosphate
Trisodium Phosphate
Sodium Tripolyphosphate
Tetrasodium Pyrophosphate
Dimethyl Phosphite
Diethyl Phosphite
Triethyl Phosphite†
Triisooctyl Phosphite†
Diethylethyl Phosphonate
Tetraethyl Pyrophosphate
Sodium Metasilicate
Ferrophosphorus
Slag
Phosphorus Trichloride
Phosphorus Oxychloride
Uranium Oxide
Di- and Trialkyl† Phosphites
Phosphonates and
Diphosphonates
Phosphorothioates and
Phosphorothioites
Alkyl Aryl Phosphites
Alkyl Acid Phosphates
and other organophosphorus
compounds and phosphatic
specialties.

†U.S. Pat. 2,678,940



Virginia-Carolina Chemical Corporation also produces—V-C* Fertilizers and V-C* Superphosphates...V-C* Phosphate Rock...V-C* Zycon*, Wavecrete* and other zeln fibers...V-C* Multiwall Paper and Textile Bags...Black Leaf* Pest Control Products...V-C* Cleaners.
*Reg. U.S. Pat. Off.

VIRGINIA-CAROLINA CHEMICAL CORPORATION

Chemicals Division: 401 EAST MAIN STREET, RICHMOND 8, VIRGINIA

SULPHURS

...BASIC FOR INDUSTRIES

Stauffer
CHEMICALS
SINCE 1885

Sulphur, an elemental raw material, is consumed at a rate of over 1,800,000 short tons per year. The major industry-consumers of sulphurs are expected to expand their sulphur requirements. Having met similar situations of progress ever since 1885, Stauffer maintains its facilities at a level to guarantee a large selection of sulphurs delivered with satisfactory technical services. Supplying the agricultural, pulp and paper, rubber, and other consuming industries with sulphurs suited for each, Stauffer is offering a complete line designed to meet every demand.

Call on Stauffer. The products and services will be the best at the most reasonable cost.

*Stauffer...
guaranteed by its name!*

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221 No. LaSalle Street, Chicago 1, Illinois
824 Wilshire Blvd., Los Angeles 14, Calif.
326 South Main Street, Akron 8, Ohio
636 California Street, San Francisco 8, Calif.
P. O. Box 7222, Houston 8, Tex. • Apopka, Fla.
North Portland, Oregon • Weslaco Texas

SPECIALTIES

Co. (Chicago) seem to have a solid position on the summer toiletries shelf.

Insect repellents are another highly seasonal product. Citronella still has its advocates, but the carefully researched products like Carbide and Carlson Chemical's 6-12 (2-ethyl-1,3-hexanediol) and 448 (active ingredients, 2-phenyl cyclohexanol and 2-cyclohexyl cyclohexanol) are gaining increasing favor. Typical products made with 448 are Merlee, Inc.'s (Minneapolis) Shoo, and Andy Lotshaw Co.'s (Chicago) Pellant.

Aches and Pains: In flagrant disregard of the warnings from suntan product manufacturers, and despite the admonitions from doctors, a number of people yearly end up with severe sunburns—that's where the summer cosmetics overlap the medical specialties.

Drug Topics has also included burn remedies in its recent survey, and though no breakdown between purchases for sunburn and other types of burn are available, it is fairly evident that sunburn is the most prevalent form of burning. In '53, remedies had a \$7.07-million sale, according to the survey; it was \$7.05 million in '52, \$6.9 million in '51.

Big names in this field have been established for years—Noxzema Chemical Co.'s (Baltimore) Noxzema, and Norwich Pharmacal Co.'s (Norwich, N. Y.) Unguentine. They probably take 60% or more of the market, with Noxzema now the top seller. Many drug firms sell their antiseptics for burn treatment, too.

With nearly a million cases of poison ivy a year, poison ivy remedies have a plump summertime market. Latest technique to gain prominence is the use of hydrocortisone—it's said to be 66-100% more effective than any other available treatments.

Most of the top remedies for poison ivy now make use of zirconium carbinate (made by Titanium Alloy Manufacturing Co.) in combination with an antihistamine. Newest of these products to hit the market is Parke, Davis' Ziradryl—the carbonate with Benadryl. Ciba has a comparable product, Pyribenzamine Cream with zirconium, and Lederle has its Rhulicream.

For the relief of burning and itching, talcs also play a part. The portion of the talcums and body powders (a \$25-million annual business) used in the summer can't be determined.

Swimmer's Plague: One of the medical problems attendant to summertime swimming is that of athlete's foot. Sales of these fungus treatments are said to approximate \$2.96 million/year.

Besides these items, there's call from queasy travelers for motion-sickness remedies. It's boom time, too, for insect-bite soothers, asthma and hay fever medicines, and for liniments for pulled muscles.

Cited this way, these ailments attendant to vacationing are perhaps dolefully overemphasized. But they are all part of the vacation picture. And they do help specialties sales—in a sense, specialties makers are just finding pleasure in other people's search for pleasure.

Label Conscious

Specialties makers everywhere are taking note of a recent action by New York state and New York city health departments—a move to strictly enforce labeling regulations on hazardous products.

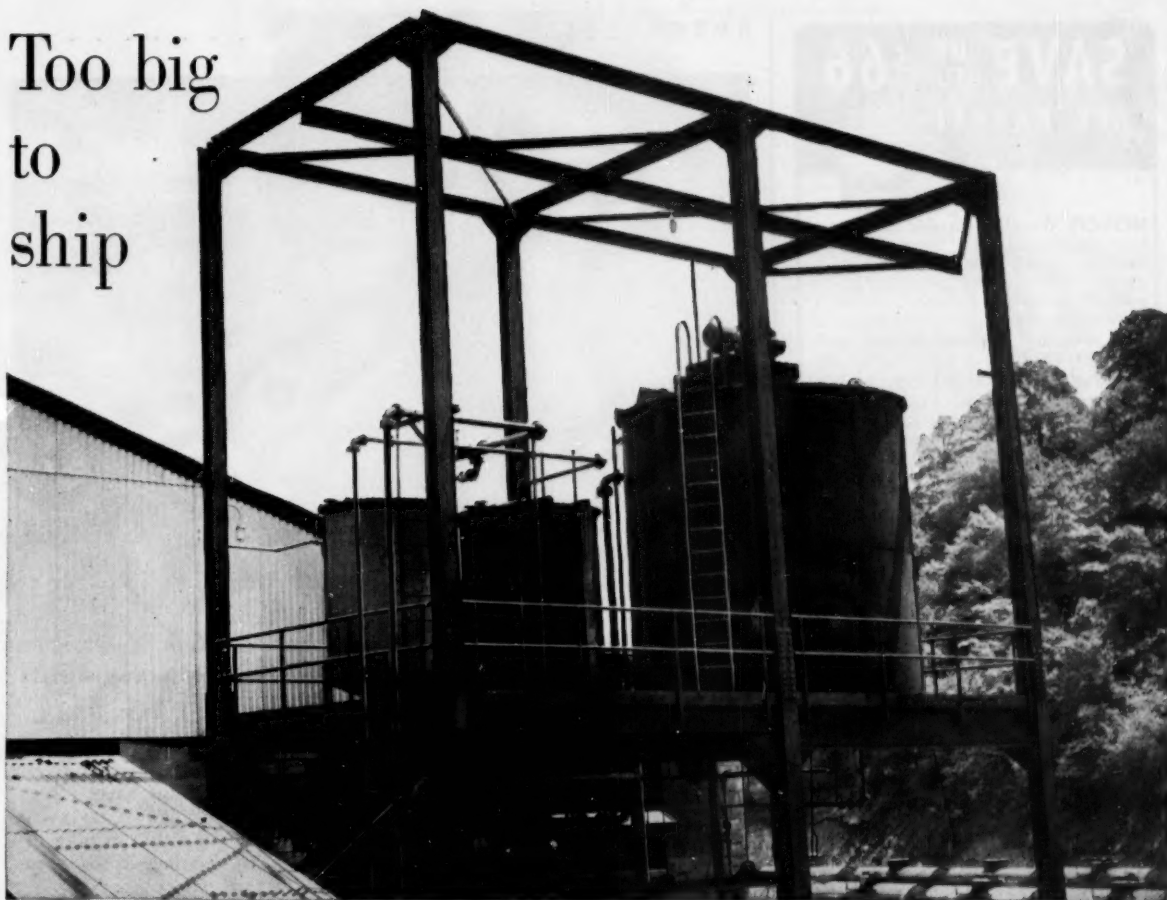
Basically, the labeling rules to be followed are those worked out by the Manufacturing Chemists' Assn., and the Chemical Specialties Manufacturers Assn. Most chemical firms have already fallen into line in labeling, but there's no secret that plenty of specialties makers give a minimum of warnings and instructions on products that might not be strictly defined as poisons, but that can be hazardous if improperly used.

"Precautionary labeling" might be the best term for what the new regulations seek to establish (*CW, June 19, p. 86*). It means giving the customer not only a list of things he must not do with a specific item, but also, where necessary, an idea of what might happen if he does misuse it. (Too frequently, a consumer feels that a product won't work right only if he stores it wrongly or uses it incorrectly, and is seemingly unaware that it's potentially dangerous.) Both the CSMA (110 East 42nd St., New York) and the MCA (246 Woodward Bldg., 15th and "H" Streets, Washington 5, D.C.) will advise firms on the proper sort of labeling.

Health department officials have cited examples of product types that might contain hazardous materials. Included: floor cleaners and waxes, furniture polish, furniture stain and paint removers, rug and upholstery cleaners, metal polishes, leather polishes, home craft and hobby supplies, some of the paint-on solders, vaporizing insecticidal chemicals, deodorants, antimildew agents.

New York city's regulation goes in effect August 27, and New York state's August 26. Violators—guilty of a misdemeanor—will face fines up to \$50, or six months in jail, or both. Dealers will be permitted to dispose of existing stocks.

Too big
to
ship



so U.S. Permabond® protective linings were installed on the spot

EQUIPMENT requiring protection against corrosive attack can be lined with Permabond linings—*right in your own plant*. The above storage tanks in a chemical plant, for example, were too big to be shipped. So United States Rubber Company's Permabond Lining was installed and vulcanized right at the job site—insuring complete protection against the corrosive chemicals stored in the tanks.

This is one more example of the versatility and adaptability of the Permabond process. You can also have it installed *as original equipment* on anything that contains or conveys corrosive materials and chemicals—piping, tanks, valves. And where special conditions occur, a wide range of synthetic Permabond lining stocks is available. Write to the address below.

"U. S." Research perfects it.

"U. S." Production builds it.

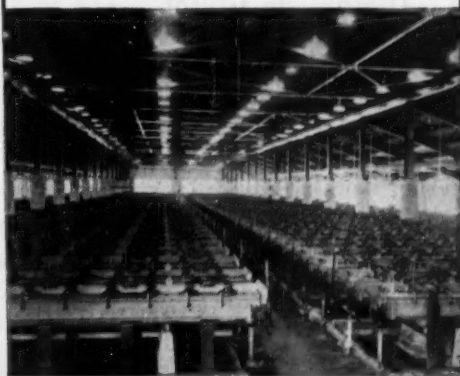
U. S. Industry depends on it.



UNITED STATES RUBBER COMPANY
MECHANICAL GOODS DIVISION, ROCKEFELLER CENTER, NEW YORK 20, N. Y.

Hose • Belting • Expansion Joints • Rubber-to-metal Products • Oil Field Specialties • Plastic Pipe and Fittings • Grinding Wheels • Packings • Tapes
Molded and Extruded Rubber and Plastic Products • Protective Linings and Coatings • Conductive Rubber • Adhesives • Roll Coverings • Mats and Matting

These hundreds of electrolytic mercury cells producing caustic soda and chlorine are lined with specially compounded Permabond hard rubber lining.



**SAVE UP TO \$66
PER BARREL**



NORCO Wooden Barrels and Kegs' low initial cost with no deposit, return or cleaning costs can save you up to \$66 per barrel investment. Inventory costs are reduced. **NORCO** answers many of your chemical, liquid and food shipping storage problems perfectly.

Made of select, vertical tight-grained non-porous Douglas Fir, they are light-weight, tough and durable with minimum shrinkage or swelling and low tare weight. Proven better for Phosphoric Acid, Acetic Acid, Oxalic Acid solutions.

Easy to up-end and store, **NORCO** Barrels and Kegs are lined to your specifications with Micro-Crystalline wax or other linings as required. Always new! 5-10-15-30-50 gal. sizes, pilfer-proof, extra-strong. Available in I. C. C. Specifications.

Let **NORCO** reduce your packaging costs—write, wire, phone today!

Largest variety of wooden barrels and kegs in America

NORTHERN COOPERAGE CO.

Division of the Greif Bros. Cooperage Corp.
Concord & E. Page, St. Paul 7, Minn.
CApital 8-4900

GLYCOLS

Ethylene Glycol

Diethylene Glycol

Triethylene Glycol

Propylene Glycol

(U.S.P. and Industrial)

Dipropylene Glycol

Hexylene Glycol

**THE
CP
CHEMICAL SOLVENTS
INCORPORATED**

60 PARK PLACE - NEWARK 2, N. J.
WOrth 2-7763 MArket 2-3650

SPECIALTIES



SPLIT LOG: From 20 to 25% of logs were heretofore unusable because of cracks. Now they can be plastic-clipped, made into veneer.

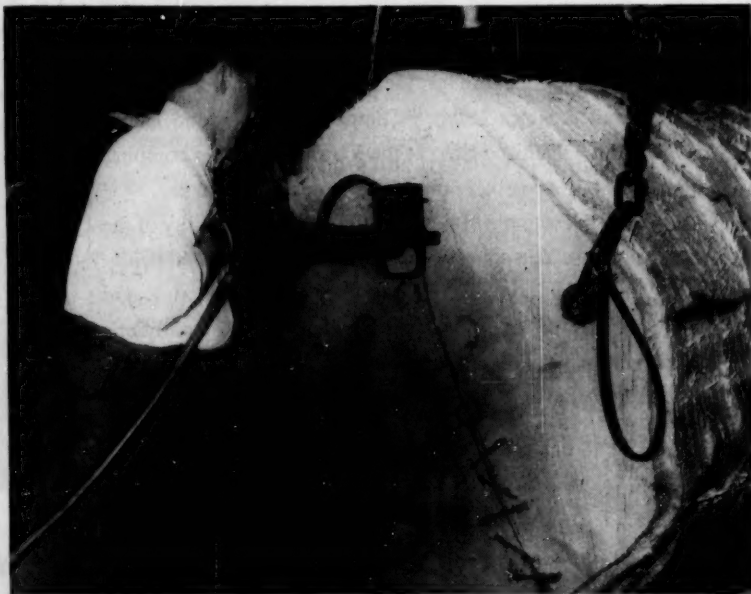
Logs Get a Plastic Lacing

Splits fixed, cracks repaired—that's the job Scotch Clips do for damaged fir logs, making them suitable for plywood veneer lathing. The small plastic units replace iron staples long used for the job—peel with the log without damaging the lathe blade.

Irvin Pearce invented and patented the clips— $4\frac{1}{2} \times \frac{1}{4} \times 1\frac{1}{4}$ -in. fasteners made of four plastics, principally

modified styrene. Clips have a high flash point (about 550 F, to avoid kiln fires) yet will soften in pulp digesters. Pearce also devised the pneumatic driver.

Columbia Basin Plastic Co. (Portland, Ore.), the manufacturer, says the clips are cheap to use (\$17/gross) and that a dollar's worth will give a peeling mill an extra \$10 worth of veneer.



CLIP HAMMER: Compressed air hammer drives in the plastic "dogs." Best potential market for the clips: Northwest lumber industry—1,000 gross/week.

what's YOUR PROBLEM?



Better Glass? Better Grass?

Whatever your basic chemical need—look for the answer in Trona's complete line of BORON products for industry and agriculture

Fine quality glassware and ceramics of strength, clarity and brilliance have a common ingredient with fields of lush, milk- and beef-producing pastures. They both depend on one or another of Trona's diversified line of Boron chemicals, vital to low cost, quality production in industry and agriculture. Uniformity from shipment to shipment, prompt delivery and a dependable source of supply are reasons why you will agree with the nation's leading producers that it is best to standardize on Trona® Boron products.



BORAX
Sodium Tetraborate

V-BOR®
Refined Pentahydrate Borax

TRONABOR®
Crude Pentahydrate Borax

PYROBOR®
Dehydrated Borax

BORIC ACID
Orthoboric or Boracic Acid

SODIUM PENTABORATE
BOROTHERM®
Soluble borate for fire-retardant water base paints

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Soluble borate for agricultural deficiencies

POTASSIUM PENTABORATE
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* Trade Mark AP&CC



American Potash & Chemical Corporation

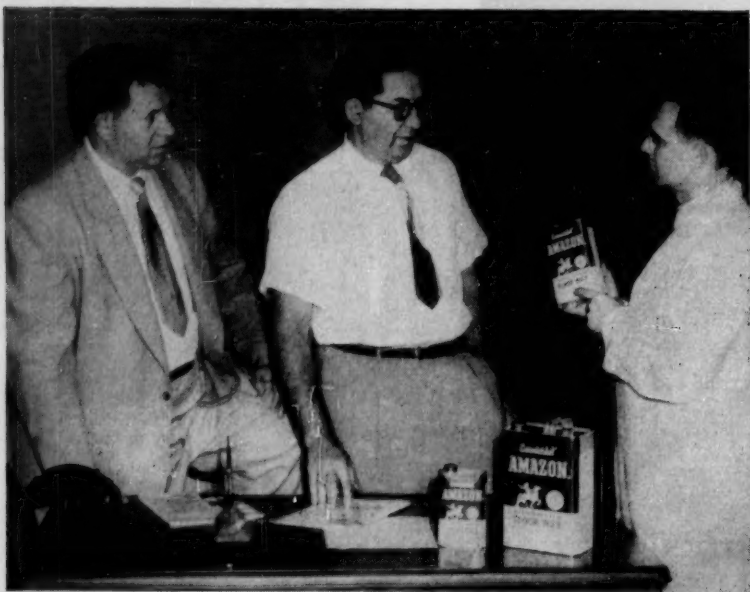
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CERAMICS • GLASS • FERTILIZER • INSECTICIDES • PULP & PAPER • REFRIGERANTS • DETERGENTS

August 21, 1954 • Chemical Week



TRIO'S TRIO*: With a new floor wax, a new policy for a specialties maker.

Wax with a Bonus Shine

On department and hardware store shelves in the East within the next few weeks will be the first household specialty to carry Trio Chemical Works Inc.'s (Brooklyn) own label. The new product is Germicidal Amazon Floor Wax, a self-polishing wax that contains a germ killer, and is touted to disinfect as it shines.

Trio, well known as a private label manufacturer, has shied away from selling under its own name. But with the development of Amazon has come a new policy. Trio figures to go national with the floor wax soon, and follow it with some other home specialties (undisclosed) before long.

Brainchild of Trio's chief chemist Kurt Wasserman, along with Milton and Harold Blank, the new wax contains 3.5% ortho benzyl parachlorophenol. The big problem in incorporating a germicide in a wax has been to maintain it in the polish emulsion. Trio feels it has cleared that hurdle, and is now seeking a patent for its product.

Selling Amazon under its own name doesn't mean Trio is abandoning its former private label business. It will continue that, although it does not plan to sell Amazon under any other label, nor license it to other manufacturers.

The company says its bactericide-polish won't produce an unpleasant

odor when it's applied, that the formulation is nonirritating to the hands, harmless to children or pets, and will kill 99% of floor germs on contact.

Amazon is packaged in three sizes—pint (75¢), quart (\$1.35), and gallon (\$4.25).

Two for Tubed Colors

The trend toward tubed pigmenting systems for paints got another boost last week when Pittsburgh Plate Glass Co. introduced its Maestro Colors system. The move came only a week after Archer-Daniels-Midland Co. (Minneapolis) unveiled its tubed color plan, which it will sell to all paint makers.

Like the well-known Colorizer Associates' tubed pigments (CW, June 19, p. 80), ADM and Pittsburgh endow their pigments-in-tubes with several advantages: they provide, conveniently, a broad range of colors; colors are easy to match; and dealers can carry a maximum number of shades in a minimum space.

Colorizer offers 16 pigments in eight tube sizes—Pittsburgh eight, in three tube sizes (4-oz., 1-oz., ¼-oz.), and ADM has 12 colorants and eight pigment portions (3-oz., 1½-oz., ¾-oz., ⅜-oz., and a ⅙-oz. size with concentrations of 100%, 50%, 25%, 12.5%).

All three systems use two basic paints to which one or two pigments

are added: ADM offers 324 shades, Pittsburgh 300, and Colorizers 1,322. (Pittsburgh offers the base paint in gallon and quart sizes; ADM's setup allows for pint sizes, too.)

ADM's color program is compatible with nearly all types of paint, water based (butadiene-styrene and polyvinyl acetate) and alkyd oil-based types. Pittsburgh, although hinting its system will be compatible with all paints, is selling Maestro for three major lines of interior paints—Wallhide Alkyd flat wall finish, Wallhide Rubberized Satin Finish, and Satinhide Enamel.

ADM plans to merchandise its system industrywide—there'll be no regional franchises, as are characteristic of Colorizer. Just a few weeks old, ADM's system has not yet been adopted by any paint firms.

Urea, Too: Nitrogen Div., Allied Chemical & Dye Corp.'s Omaha, Neb., plant, has slipped into production of urea. Ammonia facilities of the giant, \$25-million plant went onstream last April. Allied produces a pelleted urea fertilizer compound containing 45% nitrogen.

Glue Switch: Flexcraft Industries (New York) is now manufacturing the line of adhesives formerly produced by Shuman Chemical Products, Cedar Grove, N.J. It includes glues for cellulose acetate plastics, vinyl resins, rubber, wood, etc.

• A switch in the application method of Goodyear's Plibond adhesive has been worked out by Bond Adhesives Co. (Brooklyn). Bond produces the new adhesive as an unsupported film .006 in. thick. For use with metal, glass, fabrics, wood, plastics, etc., it is softened with methyl ethyl ketone or acetone. Bond calls its product Tweezle, sells it in colors.

Glowing Color: Rhode Island Laboratories, Inc. (West Warwick, R.I.) has added to its line of Violite pigments several phosphorescent types designed particularly for thermoplastic resins.

• **Institution Aimed:** Maintenance Coatings Co., Inc. (New York) is introducing a new line of water-thinned paint (made with Rohm and Haas Rhoplex 33) for institutional use, calls it Macrylic Plastic Coating. Claims: dries in 15-30 minutes, gives a scrubable surface in 45 minutes.

• **Double Duty Stripper:** For decarbonizing and paint stripping, Curran Ordnance Chemical Laboratory (Lawrence, Mass.) has developed a new solvent labeled Cold Immersion Sol-

* L to R: Milton Blank, Harold Blank, Kurt Wasserman.

Another new development using

B. F. Goodrich Chemical *raw materials*



B. F. Goodrich Chemical Company does not manufacture these plastic dip tubes. We supply the Geon resin only.

New Defense against Tank Corrosion

RIGID plastic pipe made from Geon polyvinyl chloride helps cut down internal rust and corrosion in hot water heater tanks. The pipe, or "dip tube", was developed in the search for an answer to an old problem—electrolytic action between different metals used in hot water heaters which can cause corrosion through the steel tank itself.

Because the dip tube is plastic, it does not promote this "battery action" inside the tank.

Geon resin was chosen for the dip tube after exhaustive tests of various plastics under all operating conditions. Perhaps a Geon material can help you reduce or eliminate corrosion where tubing, piping, ducts or tank linings are used. And, Geon materials have many more uses where resistance to many acids, chemicals and water is important. We'll help you select the one best suited to your needs. For information,

please write Dept. E-10, B. F. Goodrich Chemical Company, Rose Building, Cleveland 15, Ohio. Cable address: Goodchemco. In Canada: Kitchener, Ontario.



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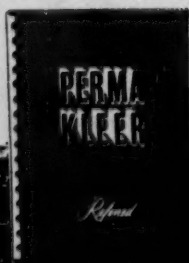
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methods and
comparisons,
pages 30-31-32

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SPECIALTIES

vent. It contains self-emulsifying solvent, synthetic detergent, digestive and peptizing agents, plus a supernatant seal to reduce evaporation. It is suggested for engine parts cleaning, and is used cold.

Rust Buster: Kooler-Kote is the trade-name of a new rust-stopping compound for industrial use—from air conditioner parts to railroad tie plates. The product is made by Petroleum Chemicals, Inc. (Fresno, Calif.), and is said to withstand a 100-hour salt spray test when applied to iron.

Plasticizer Duo: Two phthalate plasticizers for polyvinyl chloride formulations are now available from Monsanto Chemical Co.'s Organic Chemical Division. Santicizer 601 is a 50-50 mixture of di-n-octyl n-decyl phthalate and diisooctyl phthalate. Santicizer 602 is a half-and-half mixture of diisodecyl phthalate and diisooctyl phthalate.

Gilded Plastics: Two gold-colored colorants for vinyl plastics are being marketed by Claremont Pigment Dispersion Corp. (Brooklyn). Nontarnishing Palegold Paste, Code D-731, and Nontarnishing Richgold Paste, Code D-775, are said to show no breakdown when compounded with plastics and exposed to 350 F heat for one hour.

Booth Coater: A white-pigmented vinyl coating for paint spray booths has been worked out by Detrex Corp. (Detroit), and is tagged White Vincote. Sprayed on the booth walls, it gives a coating that can be easily peeled off when loaded with overspray.

Room Cure: Atlas Mineral Products (Mertztown, Pa.) is now selling Nepoxide, a room-temperature curing epoxy coating, said to have good adhesion and resistance to chemicals.

Antistatic Agent: E. F. Houghton & Co. (Philadelphia) has brought out a compound to reduce static electricity in processing textiles called Anti-Static Agent 575. A water-soluble liquid, it is said to be particularly useful in treating synthetics and blends (except acetate) as well as natural fibers.

Chemical Hair Rinse: A new role may be given to chelating agents—as hair rinses following shampoo. That's the report of Leon Goldman and Jeanne Basket of the University of Cincinnati College of Medicine who have used a 1% solution containing an equal mixture of disodium ethylenediamine-tetra-acetate dihydrate and trisodium

ethylenediaminetetra-acetate monohydrate in distilled water. The researchers say that persons who have complained of itching and stiffness of the scalp after using a shampoo can tolerate the same shampoo when it's followed by the chelating agent.

Doesn't Harm Cows: Experiments carried out by the USDA at Beltsville, Md. reveal that pasture and grassland sprayed with recommended amounts of the methoxychlor will not harm dairy cows that feed on the treated forage nor will the chemical be excreted in the milk.

Aerosol Bird-Shooer: Roost-No-More Bird Repellent, a product of National Bird Control Labs (Skokie, Ill.) is now available in a 10-oz. aerosol container. Previously the product was used by outside building maintenance contractors who dispensed it with a caulking gun. The new means of application is expected to push it into the homeowner market.

It is a gelatin compound that's harmless to birds but disagreeable (sticky) when they step on it. It's said to remain effective for a year or more, will not wash away. Birds most likely to be affected are pigeons and starlings, which often roost on window sills, spouting and roof tops.

Liquid Polish: Simoniz Co. has received a patent (U.S. Pat. 2,681,859) on a silicone liquid polish. The formulation, worked out by Paul Wenaas, includes 78 parts by weight volatile solvent; 0.75-3 parts oxidized microcrystalline wax soluble in the fluid (undissolved part remains in suspension); 0.5-3.5 parts dimethyl siloxane silicone fluid; 0.25-1.5 parts lanolin alcohols.

Skin Saver: Acid Mantle Creme is a new aluminum acetate compound for skin care, developed by Dome Chemicals, Inc. (New York). It's to restore the acid characteristics of skin, prevent dermatitis.

Slow Burn: Carl Hamalainen, at the Southern Regional Research Labs, has developed a method to flameproof textiles (U.S. Pat. 2,681, 295). It consists of impregnating the textile with a reaction mixture of polyphosphonitrilic chlorides with a polyhalopropanol containing at least two atoms of the group of bromine and chlorine.

Mineral Exchange: Use of activated charcoal in fertilizer compositions is a twist tried by William H. Eyster, Emmaus, Pa. (U.S. Pat. 2,684,295). He puts the charcoal (at a 2-10% con-



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August 21, 1954 • Chemical Week

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SPECIALTIES

centration), which has substantial ion exchange properties, in fertilizers made with insoluble minerals; the ion-exchange properties of the charcoal are said to make the elements available to plants.

On the Mark: A quick-drying, high-reflectance ink has been patented (U.S. Pat. 2,684,303) by John Leonard and Constance Patouillet, and assigned to the U.S. Navy. The ink, for glass and solid plastics, comprises a dispersion of 18-22% by weight titanium dioxide in a water solution of 7-10% by weight dextrin. The weight ratio of TiO_2 to dextrin is 2.5-2.75:1. Gum tragacanth is used as a thickener; other ingredients include bentonite, diethylene glycol monomethyl ether, a microbicide and wetting agents.

Water Well Item: A new chemical preparation for cleaning and developing water wells is being sold by Calgon, Inc. (Pittsburgh). Weltone contains Calgon, the water conditioning agent, plus a disinfecting agent and a wetting agent for better penetration. The maker says the product obviates the need for the well driller or owner to purchase the required chemicals from a number of sources.



Nonfading Beauties

FRESH flowers are preserved for three months or more by a Dutch process finding acceptance in Europe. Stems and leaves are injected with a chemical (undisclosed), dried 48 hours, then treated and cured again. Process is effective with carnations, freesias, tulips, narcissuses, and violets—they become hard and waxlike, but appear to be natural.

Petro starts construction work on polyethylene plant



NATURAL GAS EXTRACTION UNIT

The emergence of National Petro-Chemicals Corporation in 1955 as a large scale polyethylene producer will be a natural outgrowth of the entire Petro operation. From pipeline gas to polymer, the plant at Tuscola, Illinois will be an integrated unit processing ethane to ethylene to polyethylene. Only in this way can continuity of supply be assured, and quality controlled in full.

The polyethylene plant is being constructed by The M. W. Kellogg Company, and is based on a process developed by ICI and modified by Petro to fit specific conditions. Recycling of gases is eliminated to insure a product of the highest quality.

A new process control, product application and research laboratory is also under construction at Tuscola

to augment present knowledge and to improve product and process after production gets underway. These facilities are designed for prompt, efficient service to polyethylene users in their processing problems.

This new product, "Petrothene", will be available in June, 1955. From the centrally located plant, immediate shipments can be made to any part of the country—direct by truck or rail. Bulk shipments will also be handled.

Because Petro believes in the future of polyethylene, the unit has been geared to a three to four-fold production increase. As new uses are developed, this additional production will be needed, and Petro will be there to serve your expanding markets.

"PETROTHENE"... THE POLYETHYLENE OF TOMORROW

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ALKYLAMINOETHANOLS

INTERMEDIATES for

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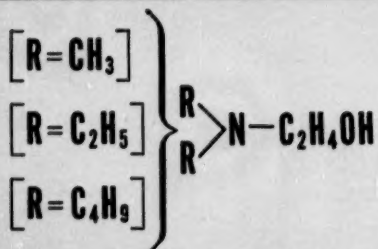
EMULSIFIERS

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DIMETHYLAMINOETHANOL

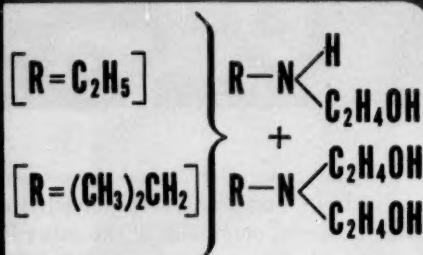
DIETHYLAMINOETHANOL

DIBUTYLAMINOETHANOL



ETHYLAMINOETHANOLS 161

ISOPROPYLAMINOETHANOLS (IPAE)



INTERESTING FACTS

Oil solubility increases as alkylamine proportion of molecule increases.

Water solubility increases as ethanol proportion of molecule increases.

Odor of alkylalkanolamines less than most alkylamines.

React both as amines and as alcohols.



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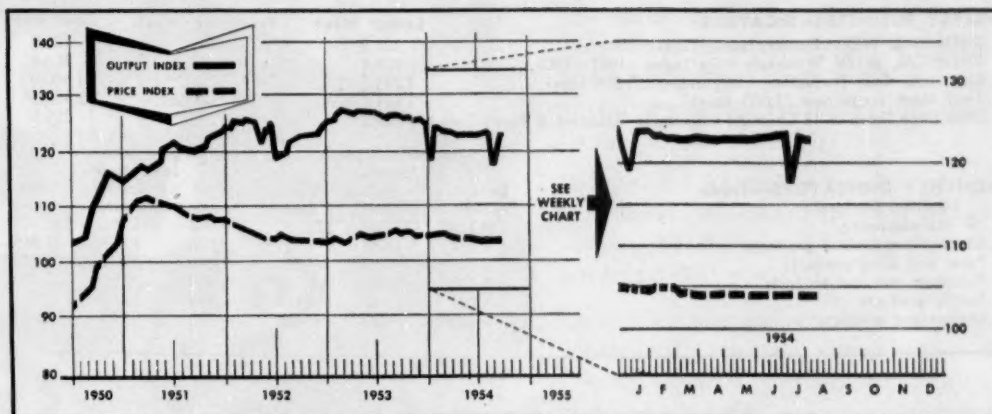
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MARKETS



CW Index of Chemical Output—Basis: Total Man Hours Worked in Selected Chemical Industries
CW Price Index—Basis: Weekly Prices of Sixteen Selected Chemicals

MARKET LETTER

It may be just the postsummer renewal of marketing activity, but at any rate, the singular dearth of important price changes seems to be about over.

Inspired perhaps by the boosts in ethylene glycols earlier this month (CW Market Letter, Aug. 14), both industrial and USP grades of propylene oxide and propylene glycols were similarly hiked 1½¢/lb. last week.

Adding considerable pressure to the upturn are the same industrywide conditions that affected the ethylenes: competitively made cuts early in the year knocked selling prices out of kilter with production costs.

Perking along at a slightly better tempo, too, are tonnage chlorine sales—enough so that some producers are even beginning to step up production. Though the outlook for fall is better than it has been, the market isn't anywhere near approaching a tight condition.

And it's a fairly safe bet that consumers needn't worry about price increases—at least for the immediate future.

Before too long the paint, varnish and lacquer industry will have another substantial source of naphtha fractions such as toluene, benzene, xylene. The new million-dollar Petrocarbon Chemical plant at Irving, Tex., (near Dallas) is just beginning to turn out the petroleum-based synthetic chemicals to be aimed primarily toward protective coating consumers.

Still in the nebulous stage are Petrocarbon plans for putting up several more plants on the Irving site to produce a list of diverse products. Output from the present installation, small now, of course, will be accelerated to full steam as soon as possible.

Also slated for greater outpouring, though only a trickle last week, are maleic anhydride and fumaric acid from a just-completed unit in National Aniline's new Moundsville, W. Va., plant.

The company, one of the top maleic producers in the country, isn't divulging any information about capacity, but earlier guesses peg

MARKET LETTER

WEEKLY BUSINESS INDICATORS

	Latest Week	Preceding Week	Year Ago
CHEMICAL WEEK Output Index (1947=100)	122.8	123.0	126.0
CHEMICAL WEEK Wholesale Price Index (1947=100)	104.3	104.2	104.8
Bituminous Coal Production (daily average, 1,000 tons)	1,233.0	1,250.0	1,560.0
Steel Ingot Production (1,000 tons)	1,481.0 (est.)	1,525.0 (act.)	2,162.0
Stock Price Index of 13 Chemical Companies (Standard & Poor's Corp.)	324.0	327.2	255.9

MONTHLY INDICATORS—Trade (Million Dollars)

	Manufacturers' Sales			Manufacturers' Inventories		
	Latest Month	Preceding Month	Year Ago	Latest Month	Preceding Month	Year Ago
All Manufacturing	\$24,176	\$23,987	\$25,882	\$44,504	\$44,798	\$46,160
Chemicals and allied products	1,722	1,664	1,697	3,098	3,053	3,065
Paper and allied products	775	714	741	1,044	1,061	1,048
Petroleum and coal products	2,198	2,089	2,268	2,813	2,791	2,630
Textile products	1,072	1,115	1,181	2,418	2,412	2,693
Leather and products	339	297	286	590	581	584

National's capability as enough to boost total U.S. production near the 60-million lb./year level (CW, April 11, '53, p. 70). That works out to a possible 10-15-million lb./year rate.

There's room for more "nearly available" sodium sulfate (salt cake). Conditions, which earlier this spring (CW Market Letter, March 13) applied a supply/demand squeeze on the rayon-grade material, apparently haven't eased to any great extent. If anything, the market is stronger.

Demand from the prime consumer (sulfate pulp) has expanded; by-product production from rayon mills (from which most of the cake is recovered) continues to fall off. Price is now a firm, but split, \$22-24/ton (c.l. at the works).

Ethyl alcohol, at the moment, doesn't reflect the salt-cake market aspect, but observers are applying some near-parallel adjectives to the picture: price, quite strong; market position, firm.

Shipments—sparked in part by the recent 3¢/gal. price slash (CW Market Letter, May 22)—have been accelerating at a good clip. That's true for both general solvent and other chemical uses. Also contributing a brightening touch: under-the-counter pricing practices, prevalent not long ago, are currently being shunned by all sellers.

Fact is, there's trade talk that present schedules (40¢/gal.) may be in for an upward nudge not long hence. Reason: business is expected to perk even more during the fourth quarter.

The road ahead looks smoother for fluorspar producers. Buffeted by rugged competition from foreign material (Mexican, Spanish, German), U.S. output has been cut drastically. Now relief is in sight—via an Office of Defense Mobilization order—for harassed miners here. ODM last week directed General Services Administration to include the vital flux material on the national stockpile list. Upcoming result: the government will shop for domestic fluorspar; the required amount, however, is a closely kept secret.

SELECTED CHEMICAL MARKET PRICE CHANGES—Week Ending August 16, 1954

UP	Change	New Price		Change	New Price
Propylene glycol, tanks, divd. E.	\$.015	\$.13	Tripropylene glycol, l.c.l., frt. alld. E.	\$.015	\$.2075
Dipropylene glycol, same basis015	.1475	Hexylene glycol, tanks, blvd.015	.125

All prices per pound unless quantity is stated.

acid for Uranium

*from
Chemico-Built
Plants*

The leaching of uranium ores requires substantial quantities of sulfuric acid. To help meet this need, Chemico designed and supplied this plant in South Africa for an important producer of uranium. It is the first of five Chemico plants which are now operating or nearing completion in South Africa alone for this purpose.

Designed and delivered on a rush schedule, this plant went into smooth and full operation promptly on completion and is running consistently above rated capacity.

Chemico's service goes with its plants wherever they are installed. Even at this distant location, skilled Chemico engineers supervised the construction and initial operation of the plant and trained the operators until they were thoroughly familiar with its working.

Here is another example of Chemico's widespread activities, constantly enlarging the scope of its experience.

We welcome your inquiries on any heavy chemical production problem. No obligation, of course.



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magnesia compounds

TYPICAL ANALYSES OF MICHIGAN MAGNESIA COMPOUNDS

TYPICAL ANALYSES OF MICHIGAN MAGNESIA COMPOUNDS									
	No. 1 Calcined Magnesite	No. 5 Calcined Magnesite	No. 15 Calcined Magnesite	No. 30C Light Calcined Magnesia	No. 40 Extra Lt. Calcined Magnesia	Basic Magnesium Carbonate	(NF Grade) Magnesium Hydroxide	(Tech. Grade) Magnesium Hydroxide	
Bulk density, weight per cubic foot	60 lb.	28 lb.	24 lb.	8½ lb.	5 lb.	5.5 lb.	15 to 25 lb.	app. 20 lb.	
Ignition loss:	0.5%	1.5%	2.5%	1.9%	3.0%	56.5%	PASSES N. F. IX SPECIFICATIONS	31.4%	
Chloride (as Cl):	0.08	0.1	0.2	0.25	0.25	0.2			
Analysis, ignited basis:						NOT IGNITED			
SiO ₂	0.3	0.3	0.3	0.3	0.3			0.15	0.20
Fe ₂ O ₃	0.2	0.2	0.2	0.2	0.2			0.08	0.15
Al ₂ O ₃	0.2	0.2	0.2	0.2	0.2			0.08	0.15
CaO	1.0	1.0	1.0	1.0	1.0			0.7	0.7
Mn				0.01	0.01			0.00	
Free Moisture						1.5		2.0	
Screen test: Through 200 mesh		95%		99.9%	99.9%	99.99%	99.0%	99.0%	
Screen test: Through 325 mesh			99.5%	99.5%	99.5%	99.5%			



We will be glad to provide further information on these Magnesia compounds, or to send you a Michigan Chemical Catalog containing technical data and other information on Michigan Chemical products.

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BASIC MANUFACTURER OF INDUSTRIAL, PHARMACEUTICAL AND AGRICULTURAL CHEMICALS



OUTSIDE AND IN, plastics beckon to home building market. Here's picture window of Rohm & Haas' Plexiglas acrylic.

Hopeful Home for Plastics

This fall—October 27 and 28, to be specific—plastics' present, and future, role in the light and heavy construction industries will, for the first time, come in for some right close scrutiny. The two-day "Plastics in Building" conference* is being put on to attract architects, designers, engineers and builders from all sections of the country.

On the agenda will be the thorough scouting of the structural, utility and

decorative uses—and possibilities—of the once widely labeled "substitutes."

It's a moot point, though, as to whether the building trade will be looking any more closely at plastics as a basic building material than many segments of the chemical process industries will be eyeing the construction field as a potential market.

Homes and other buildings may well turn out to be more lucrative outlets for polyethylene, polyesters, cellulose, vinyls, phenolics, etc. because of the coming get-together. Last year, for instance, the building industry erected structures costing a near-\$35

* Sponsors of the meeting to be held in Washington: Society of the Plastics Industry; Manufacturing Chemists' Assn., Building Research Advisory Board.



ROOFING panels are made of Cyanamid's glass fiber-reinforced Laminac polyester.



FURNITURE surfaces are impregnated with melamine resin.

billion—that adds up to a total of 1,104,000 new public and private units. This year there'll be another upward inching, with private units alone slated to climb to a 1,080,000 level.

Plastics, of course, have made some significant inroads, and managed to understudy, to a certain extent, conventional materials such as woods, metals, and ceramics in the continually expanding house and home market (see diagram). The encroaching, for the most part, however—despite the fabulous claims and the roseate visions of a bright, new, "miracle plastics" world conjured up by over-zealous boosters in the post-World War II

**SODIUM
SILICOFLUORIDE**

**ZINC
SILICOFLUORIDE**

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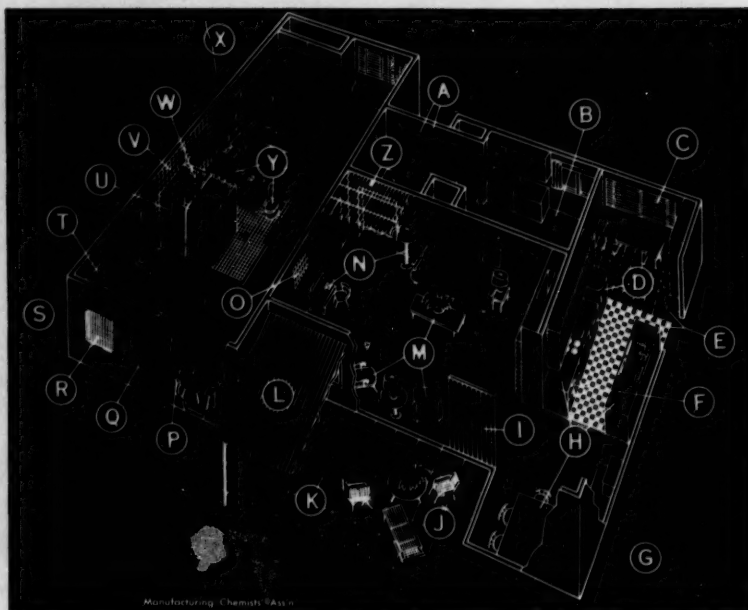
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| M—Furniture and upholstery | Z—Light diffusing ceilings |

period—has been relatively slight.

Some, of course, like the phenolics, vinyls, polyesters and such, have passed the time-tested stage, are today being consumed by the home-making trade in respectable quantities. But even these must look to the future for a really hefty consumption.

Take phenolic molding powders for example. Of the more than 200 million lbs. sold last year, relatively small amounts went into large-size moldings and furniture units. Smaller units though, for fans, radios, television sets, air conditioners, take some 40 million lbs./year, with the biggest portion going into TV cabinets.

The laminating branch of the phenolic industry, too, is relatively small now, but hopeful. It's impossible to even estimate at actual poundage consumption, but indicative of the current comparatively minuscule dent made to date is this fact: decorative laminates have taken over perhaps 3

or 4% of the potential horizontal market in such products as counter tops, dinette sets, drainboards, furniture. Vertical markets (wall covering, doors, other structural applications) too, are admittedly barely touched.

Take the case of nylon molding powder. Total sales last year probably was in the neighborhood of 12-15 million lbs. Yet perhaps less than 10,000 lbs. found use in houses, and that in bearing surfaces on hinges and rollers for sliding closet doors. Nylon, though, is one of the toughest thermoplastics, may one day seriously buck brass in many uses. One possibility: window sash locks. In the more than a million homes to be built this year—with an average of 14 or 15 windows each—there can be an attractive market for the polyamide.

To spotlight just such mutually beneficial possibilities is the motivating force behind the plastics-building meeting in Washington.

Aluminum Go-Round

The third-round expansion of U.S. aluminum production is still hanging fire, and there's a chance that it may not hit the once-proposed output goal of 214,000 tons. Reason is hinged to the Office of Defense Mobilization's current review of the military's aluminum requirements.

At the moment that outlet is said to be taking about 16% of domestic output, 9% below last year's 27%. ODM, of course, isn't being pressured by any threat of an aluminum shortage. The industry has just racked up a record six-month total of primary aluminum production that nearly equals the total annual output of a scant five years ago. And when compared with production of Jan.-June '53, this year is up 20%. The score: first half '54, 1,431 million lbs.; first half '53, 1,198 million.

The very latest production figures available from the Aluminum Assn. in New York—for July and a revised June report—show a continuing record-rack-up. Original June report totaled 241,360,488 lbs., the revision adds another 155,855 lbs. to that. July turns out to be an all-time record month—252,323,794 million lbs.—which brings the total for 1954 through July, to over 1,416 million lbs.

Revised, too, are the figures that peg the second quarter of this year at a top 732,660,294.

Note the impressive upward trend in U.S. annual aluminum turnout:

	Primary Production (million lbs.)	Year-end Capacity (est.) (million lbs.)
1949	1,207	1,268
1950	1,437	1,709
1951	1,674	1,824
1952	1,875	2,461
1953	2,504	2,789
1954 (est.)	2,900	3,000

Behind the steady increase in aluminum is the government's periodic prompting for more production. Right now, except for Anaconda Copper's plant—which is expected to begin operations early next year—ODM's second round of expansion is complete. That totals some 245,000 tons/year, is on top of the first round's whopping 420,000 tons.

Assigned to carry the burden of a third-round step-up in capacities are three main prospects: Olin Industries, for 110,000 tons; Harvey Machine, 54,000 tons; Wheland Co., for 50,000.

There aren't any official figures ex-



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MARKETS

tant, of course, but some trade observers peg the government's aluminum stockpile at about one-fifth of its goal. There's speculation, too, that as much as 25% of this year's estimated 2,900 million lbs. of domestically produced aluminum may supplement the stockpile reservoir.

Aside from the defense needs for aluminum, there has been a sizable hike in demand from "civilian" outlets. One of the more dramatically growing aluminum outlets is the so-called "curtain walls," prefabricated industrial building fronts. This one use alone is expected to dip deeply into the light-metal pot. Add, too, roofing, architectural shapes, siding, windows, insulation—besides store and building fronts—and you get the basis for one estimate that some 25-30% of annual domestic aluminum is diverted to the building material category. Fact is the building trade is nosing out transportation uses as an aluminum consumer. The latter category, leading since shortly after the end of World War II, has by this year fallen into second spot with its 15-20% use of total U.S. aluminum production.

Not a few chemical companies, however, show as much concern with who is using aluminum as they do with how much they use. Reason is bed-rock economics: it takes a lot of chemical process industry products to produce a ton of aluminum. Here's a breakdown: to produce 2,000 lbs. of primary aluminum requires 4,000 lbs. of alumina, 1,300 lbs. carbon paste, 50-60 lbs. of cryolite, 70-80 lbs. aluminum fluoride.

A further chemical aspect: to produce 4,000 lbs. of alumina needed for a ton of primary aluminum requires 8,000 lbs. of bauxite, 240-600 lbs. of soda ash, 200-400 lbs. quicklime and 1,600-3,200 lbs. of coal (or 20,000-40,000 cu. ft. of natural gas).

Multiply those figures by this year's estimate of nearly 3 billion lbs. of aluminum to be produced, and it's good business.

Dip in Carbon Black

Most estimates made earlier this year re production and sales of chemical commodities during 1954, foresaw a slight fall-off from the high-level tempo of last year. And, for most items, the prognostications show every indication of being fulfilled. Latest government data from the Bureau of Mines (Dept. of Interior) on carbon black point out that the important rubber chemical, too, has slipped into the ease-down pattern.

Both production and shipments during the first half of '54 are lower

than were reported for the similar 6 month period of '53. The decline amounts to 17% on the former, about 12% on the latter—a somewhat higher rate than had been expected.

Stocks of carbon black, although cut some 36 million lbs. during the Jan.-June '54 stretch, are higher this year than they were at the end of June last year.

Deliveries in the half-way month this year edged ahead of the previous month by about 4.3 million lbs., but fell short nearly 14 million lbs. when compared to the bustling business of June '53. The shipment figures: June '54, 126.6 million; May '54, 122.3 million; June '53, 140.6 million lbs.

Total deliveries for the comparable 6-month periods stack up like this: 1954, 733.3 million lbs. vs. approximately 836.5 million last year.

Production Slice: On the output side of the ledger, producers turned out about 113.3 million lbs. of carbon black during June of this year—considerably lower than the 135.8 million in the same month of 1953. Further underscoring carbon black's slip is the more than 6-million-lb. cut in production from this year's May figure, 119.7 million.

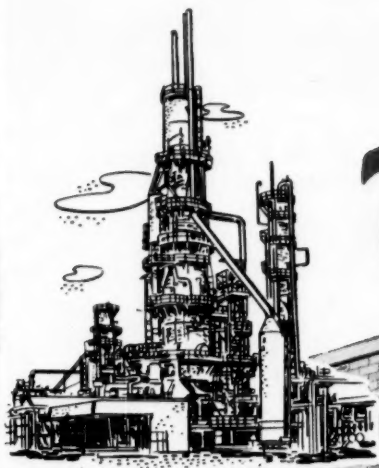
The latest information on carbon black stocks on hand gives a total of 368.6 million lbs.—at the end of June '54—or about 12.8 million lbs. more than was available at the end of the second quarter of 1953.

Prime outlet in this country for carbon black, of course, is the rubber industry. At times rubber has taken as much as 93% of the annual production of carbon black.

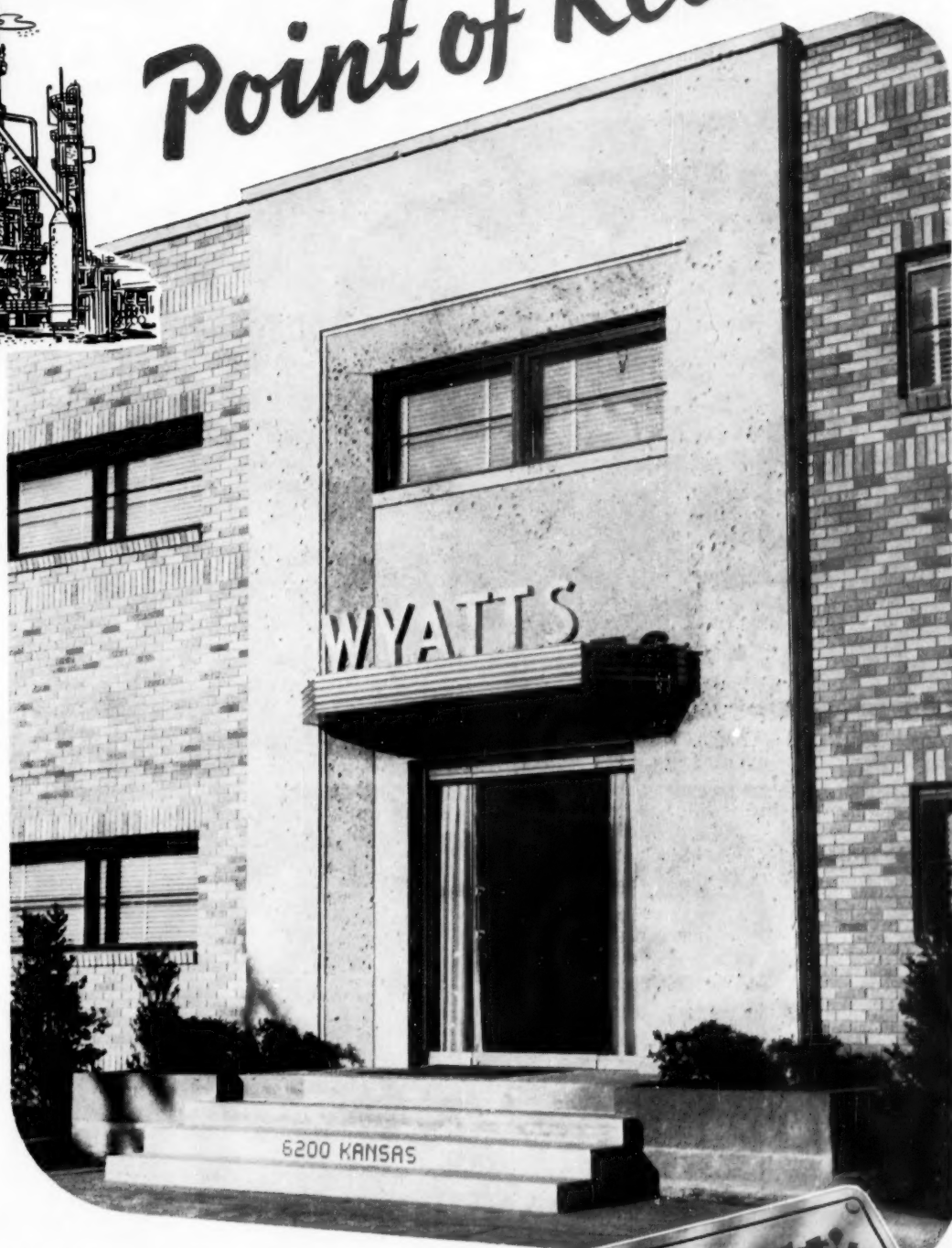
Some pertinent 1953-52 comparisons of total sales and end use consumptions reveal a mixed picture. Sales of carbon black produced from natural gas and liquid hydrocarbons in '53 added up to about 1,560.0 million lbs., compared with slightly more than 1,447.0 million sold the previous year.

Some 1,134.0 million went to the rubber industry last year—about 57,000 lbs. more than the 1,075.0 million sold to the same outlet in '52. Ink companies, last year bought 45.8 million lbs.—almost 1.8 million over '52's quantity. On the downside, though—by over 2 million lbs.—were sales to the paint industry. The score: last year, 8.46 million vs 1952's 10.6 million lbs.

Thus the reason for this year's summer-slowdown in carbon black demand can be directly traced to rubber industry vacillations—including vacations and inventory shutdowns. Chances are there'll be a pick-up later.



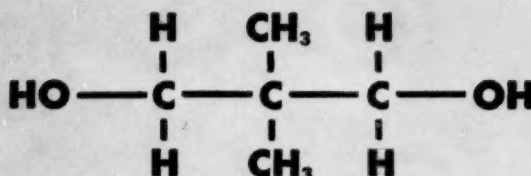
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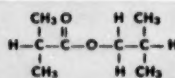
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other derivatives

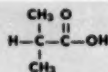
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Acidity, as isobutyric acid	0.5% maximum
Refractive Index, n_{20}^D	1.3930 ± 0.001

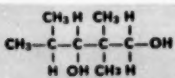
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isobutyric acid

Color, APHA	10 maximum
Specific Gravity, 20°/20°C	0.942-0.956
Isobutyric Acid	98% minimum
Water	0.2% maximum
Boiling Range	95% 152°-154°C/760 mm
Refractive Index, n_{20}^D	1.3930 ± 0.001

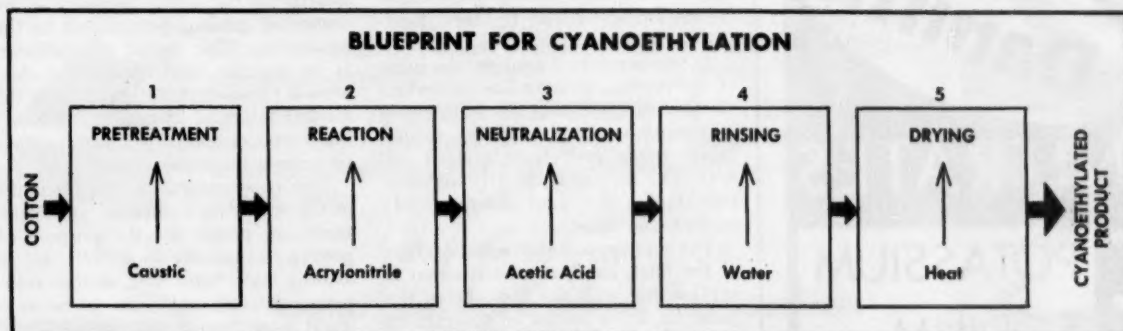
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Melting Point	49°-51°C
Purity	95% minimum

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WHAT IT REVEALS: A five-step, straight-line procedure that might well lend itself to continuous operation.

Chemical Build-Up for King Cotton

An intriguing new use for acrylonitrile is moving to a showdown at both ends of the cotton belt.

From pilot plants under construction by American Cyanamid and Monsanto, a flood of acrylonitrile-treated cotton will soon be headed for field tests in a host of applications.

Said to be strong, easy to dye and rot-resistant, the fibers could recast the odds in cotton's running war with the synthetics.

Thanks to the chemical fibers, acrylonitrile is largely an unmentionable word to the men who make their living from cotton and wool. But for the cotton industry, at least, antagonism toward the chemical might well change into something akin to affection. And it could happen reasonably soon under the mellowing influence of a promising new group of cyanoethylated cellulose fibers made by acrylonitrile treatment of cotton.

Unveiled last summer (CW, Sept. 5, '53, p. 24) at the Institute of Textile Technology (Charlottesville, Va.) where they were developed, the still-experimental hybrids have triggered a volley of research and development activity aimed at one target: commercialization. First tangible results of this broadside are now taking shape at two widely separated points in the South.

At the big Rossville, Ga., mill of cotton processor Standard-Coosa-Thatcher Co., Cyanamid is nearing completion of a hefty pilot plant that is slated to supply evaluation lots of cyanoethylated fiber to about half of the South's cotton mills.

Just getting started on its own experimental production unit at Texas City, Tex., is Monsanto, now winding up laboratory studies on the new proc-

ess. Output of this plant will be used—according to the terms of a recent agreement—for field evaluation of the fabric, in cooperation with ITT and Fulton Bag and Cotton Mills, (Atlanta, Ga.).

It's no secret that Monsanto knows what Cyanamid is up to, and vice versa. Acrylonitrile, of course, is the basis of this mutual interest. Both firms have worked with ITT; neither wants to see the other get the jump on what could shape up as an expansive new acrylonitrile use. Cyanamid's active interest in cyanoethylation of cotton dates back about five years, has taken the form of a research fellowship at ITT and continuing studies within the company's laboratories. Monsanto's participation is of more recent vintage. Carbide and Carbon Chemicals, which rounds out the acrylonitrile-producing threesome, has for the most part kept clear of substantial involvement.

Just how much of future acrylonitrile production might be devoured by cyanoethylation is a matter of conjecture. Contributing to the uncertainty is a lack of hard data on the textile jobs that are likely to be captured by the hybrid fibers. This, it is hoped, will be corrected by performance studies on material emanating

from the new production units.

But an educated guess is justifiable on the basis of what has been learned at ITT. There, under the supervision of technical director Jack Compton, institute researchers have produced cyanoethylated cotton possessing these claimed advantages over the virgin material:

- Increased receptiveness to all dyes tested, including acid colors.
- Permanent resistance to rot, mildew, bacteria, etc.
- Higher abrasion- and stretch-resistance.
- Greater retention of strength after exposure to (dry and wet) heat.

Consider outlets that would pay a premium for these properties and you arrive at such logical candidates as tents, awnings, tarpaulins, packing fabrics, etc. Although apparel is not strictly ruled out—treated fabric retains the feel and appearance of cotton—it takes a back seat to applications in which heat and rot are prime factors.

Another point in cyanoethylation's favor is that it reportedly predisposes cotton to subsequent treatments—e.g., waterproofing, wrinkleproofing, etc.

Without a good, large-scale production process, however, all of these promising attributes will be strictly academic. For obvious reasons, both Cyanamid and Monsanto are taking pains to preclude this possibility.

The production units under construction will doubtless yield important data needed to bring cyanoethylation to process maturity. But a good deal is already known about the method.

Simply, cyanoethylation reduces to a straightforward procedure anchoring 3-5% nitrogen on the cellulose poly-

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RESEARCH

mer. Already a success in yarn package treating equipment, the method is now being tailored to fabric treatment.

In this capacity it assumes the guise of a five-step, straight-line procedure (see chart, p. 97) that should fit nicely into continuous mill operation. Cotton fabric would feed from a stock roll into: (1) caustic bath; (2) acrylonitrile tank; (3) acid solution; (4) washer; (5) drier.

The caustic induces mild swelling of the fiber, catalyzes the reaction of acrylonitrile with the fiber. From this point on, it's a matter of neutralizing the excess base, washing and drying. Patents on the process have been applied for by Compton.

And at least one patent dealing with



ITT'S COMPTON: For cotton men, a mellowing influence.

cianoethylated cellulose is on record: 2,473,308, assigned to Rohm & Haas.

Newest work on the process appears to hinge on an attempt to install acrylonitrile recovery procedures.

Process costs right now are a big question mark. Until they're accurately determined in pilot operation, moreover, exact cost of the modified fiber remains a mystery. On a materials basis, however, some rough calculations are illuminating. As a result of processing, cotton (about 35¢/lb.) picks up about 15% by weight of acrylonitrile (about 31¢/lb.). Sold on a weight basis, the product suffers no cost handicap from its chemical component.

Actual price, of course, would depend chiefly on processing cost, the still-unknown quantity.

Despite all the unknowns, cyano-

ethylation has been greeted in some quarters of the cotton economy as the means of gaining ground lost to the synthetics. This brand of optimism is, to say the least, premature. And even if cyanoethylation lives up to the fondest hopes of its boosters, it won't put chemical companies in the cotton processing business.

The experimental production units in the works by Cyanamid and Monsanto are purely for the purpose of getting cyanoethylation off to a healthy start. After that, neither company expresses any desire to be anything more than a raw material supplier and interested observer. Cyanamid, as a matter of fact, is supplying equipment and know-how for a plant housed in a Standard-Coosa-Thatcher building, to be operated by ITT at Rossville.

Persistence Pays: Although cyanoethylation is one of the most promising ideas for chemically modifying cotton, it is by no means the first attempt in this direction.

For years the Dept. of Agriculture has carried out research in this field at its Southern Regional Research Laboratory (New Orleans, La.). Results of this work have been the well-known partial acetylation process and a more recent technique for enhancing the properties of cotton by treating with anhydrous liquid monoethylamine.

Moreover, cyanoethylation is not the first instance of the application of acrylonitrile to cotton processing. In 1945, for example, research by Rohm & Haas yielded patent 2,390,032 on an acrylonitrile-based improvement in mercerization.

In this procedure, cotton is treated with acrylonitrile prior to immersion in caustic solution, then washed and dried under tension. Tensile strength of the finished cloth is said to be about 30% greater than that of comparable untreated material.

Other instances of the use of the compound in cotton processing encompass polymerization of acrylonitrile on the fabric and impregnation of cloth with a copolymer of acrylonitrile and styrene or vinyl chloride. Both treatments produce a marked stiffening effect. Slip-resistance and run-resistance (in stockings), on the other hand, have been imparted to textiles by acrylonitrile-butadiene copolymers.

Thus far, acrylonitrile has not been a roaring success, tonnage-wise, in any of these indicated jobs. That it will fare better in its latest bid is the wish of chemical and cotton men, alike.

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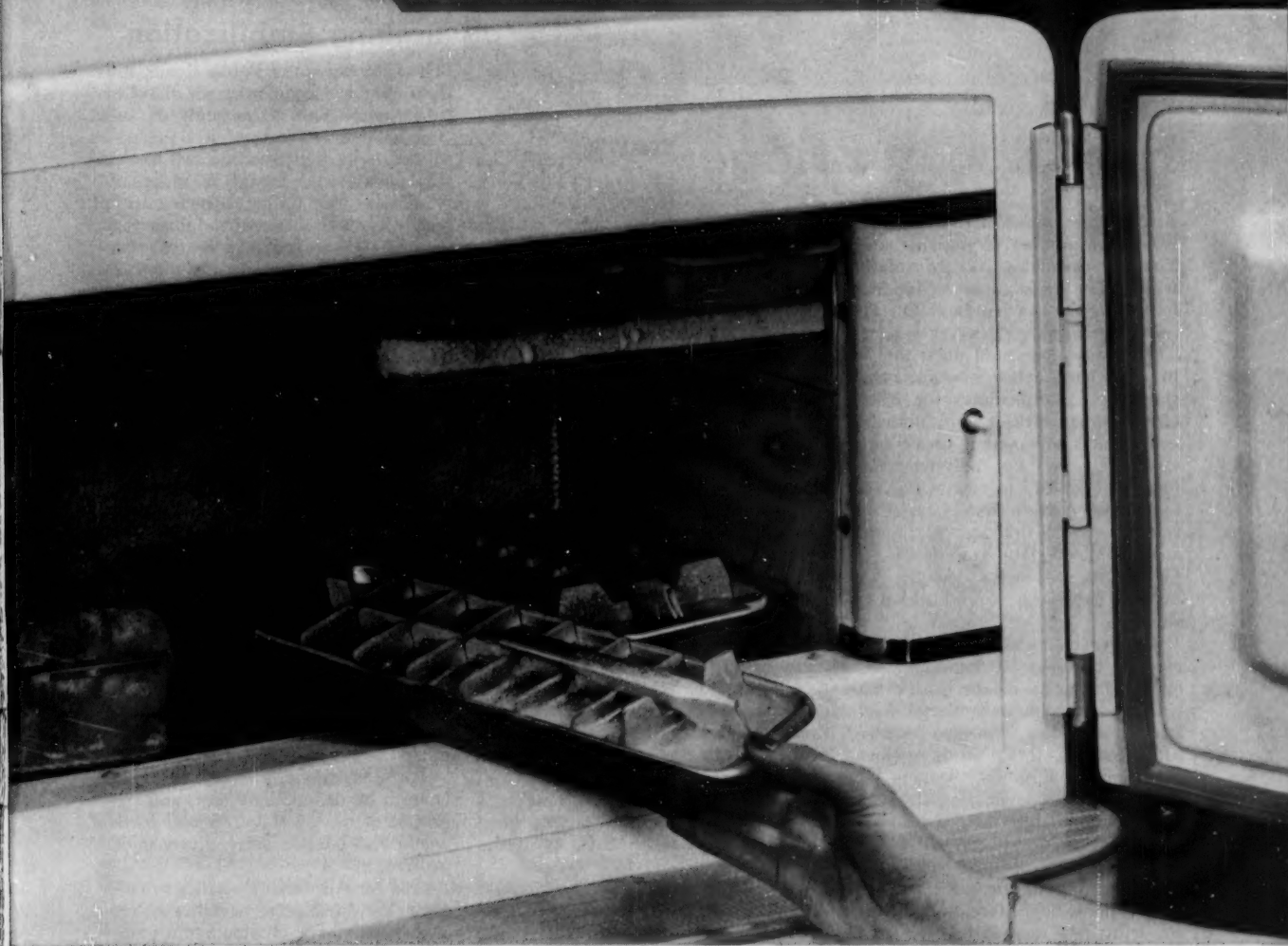
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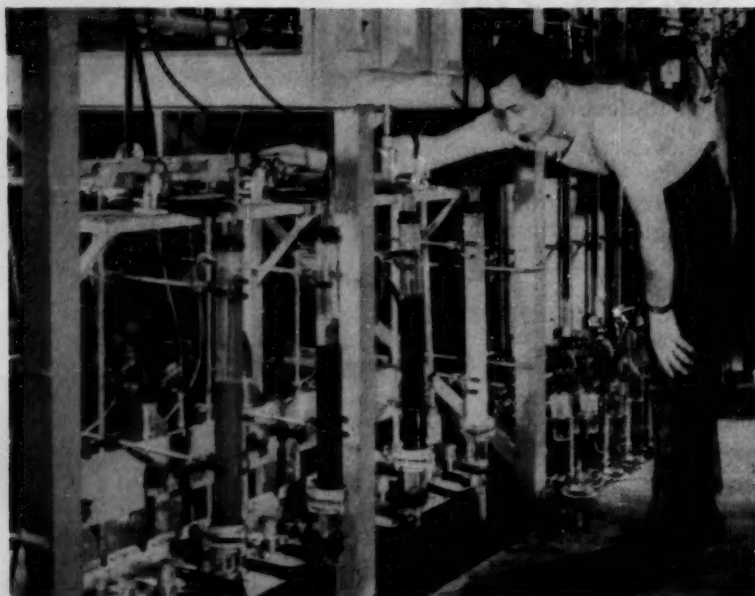


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ION EXCHANGE PROBE: It's changing the face of an old principle.

New Epoxy Bridge

Bridging the chasm between fats and oils and a number of valuable chemical intermediates is epoxidation, which this week came in for some face-lifting at the hands of Du Pont researchers.

Their innovation could point the way to more and better plasticizers and stabilizers, intermediates for insecticides, paints, varnishes and lubricants.

Du Pont's new method uses a cation exchange resin (e.g., polystyrene sulfonic acid resins) in conjunction with hydrogen peroxide and glacial acetic acid. The resin functions like a solid acid, eliminates the traditional need for sulfuric acid in the reaction. This, in turn, makes for several added advantages.

A typical epoxidation by the new method requires stirring together a mixture of methyl oleate, resin treated with acetic acid, and glacial acetic acid, then adding hydrogen peroxide. After cooling, the resin is removed by vacuum filtration, leaving the epoxidized product in the filtrate.

The comparable older method involves a reaction between methyl oleate and peracetic acid (made from glacial acetic, sulfuric acids, and hydrogen peroxide). Here, sodium acetate trihydrate must first be added to the peracetic acid in order to remove the sulfuric acid used as a catalyst.

High spot of the new method is the use of an ion exchange resin as the catalyst. Claimed advantages of the

resin technique over more conventional acid methods are sevenfold:

(1) Lower materials cost. Resin can be reused, and losses in the recovery of large excesses of acetic acid are reduced. Sulfuric acid and neutralizing agents like sodium acetate are not required.

(2) Higher yield of epoxidized product.

(3) Less by-product formation.

(4) Increased efficiency of hydrogen peroxide utilization. (Using a mineral acid catalyst instead of resin, about 10% of the hydrogen peroxide is not converted into peracetic acid. Du Pont claims nearly 100% conversion of peroxide in the presence of the resin.)

(5) No need for preforming and storing peracid.

(6) Simpler acid separation and recovery. (Most of the acetic acid remains in the resin. The small amount dissolved in the epoxidized oil is quickly removed.)

(7) Less cooling of the reaction is needed. (It is not necessary to keep temperatures below 45 C, as in the established method.)

Du Pont's interest in epoxidation stems from its hydrogen peroxide business. But it's not the only party pushing peracid research. Buffalo Electro-Chemical Co., also strong in hydrogen peroxide, has been probing new epoxidation methods for about five years, has one patent pending on a method

involving peracetic acid. Dept. of Agriculture's Eastern Regional Research Laboratory (Philadelphia) has also shown a strong interest (CW, Aug. 7, p. 80). And Du Pont's resin technique in some instances parallels General Mills' procedures embodied in patent 2,458,484. Rohm & Haas and Dow, whose ion exchange resins (Amberlite IR-120 and Dowex 50-X-8, respectively), Du Pont says, can be used in its process, disclaim any interest beyond the resins themselves.

Right now, no serious disadvantages to the hydrogen peroxide-resin technique are apparent. Unless some unforeseen flaws develop, it could be a very useful tool in lopping off some of the fat surplus, giving new impetus to investigations of epoxygenated organics.

Seeking Stabilization

The U.S. Bureau of Public Roads and four chemical companies are about to make some final agreements on soil stabilization research.

Slated to be signed within two weeks, they may well herald a series of studies angling for a relatively cheap, easily applied chemical stabilizer that can be used in highway construction.

The bureau is interested in stabilization for this reason: the weight-supporting ability of the soil on which a highway lies may vary considerably. Even within a short stretch of land, you can find a great variety of soils, each of which exhibits different load carrying properties in its natural state, when wet, and when frozen and thawed. This means that a designer often specifies a thick pavement or increased reinforcement because he can't be sure how much load the subgrade will carry, and how much the highway itself must bear.

If a highway builder can find an effective subgrade stabilizer, he might, for example, use an 8- rather than a 10-inch concrete slab for a specific job. This might cut actual pavement cost by, perhaps, 50 cents per square yard—the equivalent of \$7,000 per mile.

To be economic, a stabilizer would have to be of moderate cost, and the process of mixing stabilizer and earth would also have to be relatively inexpensive.

Free for All: Such materials as calcium acrylate, vinyl acetate-maleic acid copolymer, chrome-lignin, aniline-furfural and fly ash-calcium chloride mixtures have been tested for different stabilizing applications. And it's likely that no one candidate will get an exclusive nod.

Different stabilizers are needed for different soils in order to make the subgrade a uniform load-bearer under existing weather conditions. The ideal base is a clay-sand-gravel mixture which compacts to high density and still retains its stability and load-carrying qualities under most conditions. Hence the search is for stabilizers that will give soils as they are found the characteristics of such a base. This means, for example, giving sandy soil a more binding quality, or opening up clay soils to give them a more pervious character.

In materials that are effective stabilizers, researchers have generally found two drawbacks to widespread use: cost of the chemical is often too high to be generally economic; mixing the material with soil to an adequate depth is usually too expensive and difficult.

As envisioned by public roads officials, the research would involve primarily the sharing of skills and know-how. The bureau would supply information on structure and mechanical properties of soils; companies, the chemical skills. Concerns would keep full proprietary rights to their developments, since the government would make them no money payments, nor in any way reimburse them for services performed.

While the bureau would be interested in subgrade stabilization as part of its normal activities, it now has an additional reason in President Eisenhower's new highway construction program. Although it has no legislative or policy responsibilities for the program, the bureau administers the federal highway grants made by Congress.

The Administration, come next January, will ask Congress to approve a \$50 billion, ten-year highway program.


Since state highway officials now estimate that this program would involve repair or replacement of almost half a million miles of highway, any chemical company which comes up with a suitable stabilizer would have an excellent market in this project alone.

The agreements now being negotiated are the result of letters written to a score of chemical companies, among them American Cyanamid, Dow, Du Pont, Monsanto, and Rohm & Haas.


But officials of the bureau stress their desire to cooperate with any other company with a promising stabilizer. The more, the better, they say.

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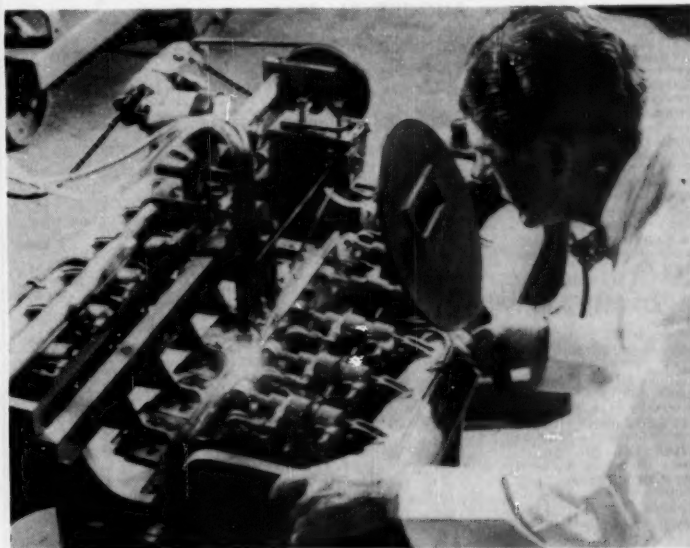
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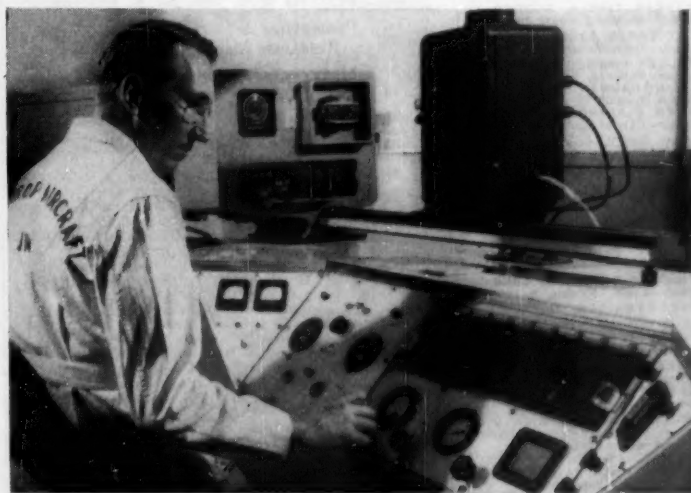


Looking for New Heat Cheaters

ALTHOUGH they are going about it in different ways, both men are after the same thing. Researchers at Northrop's Aircraft's Hawthorne, Calif., laboratories, they're seeking structural materials and finishes that can pierce the "thermal barrier" set up by friction at speeds above the sonic range. The metallurgist (*above*) is observing the fabrication of a temperature-resistant titanium joint by a high-speed mechanical inert gas welding apparatus; while his chemist counterpart (*below*) subjects the same alloy to spectrochemical analysis in a Jarrell-Ash spectrograph. Both pieces of apparatus are part of new

facilities installed expressly for the high-temperature probe. In addition to metals, the aircraft industry must find new plastics, paints and finishes that can withstand the tremendous heats generated by air friction at speeds above 1,000 m.p.h. Northrop is also using its new instruments to size up plastic laminates, elastomers, structural adhesives, thermal and acoustic insulation.

Importance of the new Northrop effort is highlighted by the fact that present-day aircraft materials melt or seriously weaken at the temperatures tomorrow's supersonic craft will generate.



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RESEARCH

Spreading the Word: Normally, there's little to interest industrial researchers in the *Journal of Hematology* (New York), but the entire world of scientific literature is buzzing about an experiment in international communications now being conducted by that medical periodical.

Simply, it consists of the publication of article summaries in Interlingua, the new supranational language that is attracting wide support from foreign scientists. Synthesized from elements common to a number of European tongues, the new language is considered by some to be one of the keys to freer worldwide communication, accelerated scientific advancement.

Growth Potential: Three companies revealed research expansion plans this week.

- American Enka has contracted for the construction of the main portion of a new \$1-million research building on the site of the firm's Enka, N.C., plant.

- U.S. Rubber's beleaguered hopes for a new research center in northern New Jersey (CW, Apr. 24, p. 101) moved a step closer to realization with the scheduling of ground breaking for this fall. The proposed \$4-million project, opposed by a faction of its potential neighbors, will occupy a 90-acre site in Preakness, Wayne Township, N.J.

- Monsanto will complete consolidation of its inorganic chemicals researchers with a new research center at Creve Coeur, Mo. If construction proceeds smoothly, the new facilities will be finished by fall of 1955.

Available: A clutch of new organics have just been added to Distillation Products Industries' (Rochester, N.Y.) line of fine chemicals. Among the new members: phthalaldehydic acid; 4,4'-biphenylenebis(3,3 - dimethyl - 1 - triazene); 1-(4-biphenyl)-3,3-dimethyl-triazene.

Debut: A new research and consulting firm is now open for business in Chicago. Headed by former Miner Laboratories researcher, Bernard Wolnak, the company has been named Mid-West Laboratories, will concentrate on industrial biochemistry, by-product utilization, and waste disposal. A pioneer in research on dried activated sewage sludge, Wolnak is a key figure in the city of Milwaukee's plans for a new plant to extract vitamin B₁₂ from this material.

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